American Dynamics

From Tyco Security Products

VideoEdge Camera Handler Release Notes

VideoEdge 4.2.1
Camera Handler v4.2.1.1022

In case of discrepancy, the information in this document supersedes information in other document(s), media(s) or provided verbally.

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American Dynamics

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General Purpose

The purpose of this document is to provide a detailed list of supported manufacturers and manufacturers' camera lines integrated and supported by the American Dynamics VideoEdge Network Video Recorder version 4.2.1 and the VideoEdge Camera Handler version 4.2.1.

Cameras and Encoders supported and available with current version 4.2.1:

- American Dynamics
  - •American Dynamics eight channel encoder
  - •American Dynamics Fixed IP
  - •American Dynamics illustra 210 Series
  - •American Dynamics illustra 400 Series
  - •American Dynamics illustra 600/610/610LT Series
  - •American Dynamics IP SpeedDome Cameras
- ACTi Corporation Cameras
- Arecont Vision Cameras
- AXIS Cameras and Encoders
- Bosch Cameras
- CBC Cameras
- FLIR
- Panasonic Cameras
- Samsung Encoders and Cameras
- SONY Encoders and Cameras

Note

You can upgrade your VideoEdge Camera Handler version at http://www.americandynamics.net

What's New in This Release

This camera handler release provides integration for the following cameras:

- illustra 600/610 Box and Bullet

In addition, the handler improves bandwidth efficiency for American Dynamics IP SpeedDome cameras with firmware 2.0 or later

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
illustra 600/610 Bullet Cameras					
ADCi600-B021	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi600-B041	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi600-B061	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-B021	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-B041	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-B061	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
illustra 600/610 Box Cameras					
ADCi600-X011	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-X011	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
illustra 600LT Bullet Cameras					
ADCi600LT-B021	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
illustra 600LT Box Cameras					
ADCi600-X011	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified

American Dynamics IP SpeedDome

Bandwidth efficiency has been improved for American Dynamics IP SpeedDome cameras running firmware version 2.0 or later.

The VideoEdge NVR will use an algorithm to control video quality according to the camera firmware version. If version is less than 2.0, the video quality will be altered by changing cameras quality value. If version is 2.0 or later, the video quality will be altered by changing the camera's bitrate value. The conversion from quality to bitrate is:

Camera Firmware	Approx Bitrate at Quality Setting (Max FPS, Max Resolution)				
	20	40	60	80	100
PAL v1.x firmware	1,140,000	5,240,000	9,220,000	16,780,000	25,160,000
NTSC v1.x firmware	1,180,000	5,320,000	8,160,000	15,100,000	24,750,000
PAL v2.x firmware	278,600	557,000	1,080,000	2,130,000	4,220,000
NTSC v2.x firmware	290,000	550,000	1,070,000	2,120,000	4,200,000

Note

Since the NVR uses CBR to control bitrate, the bandwidth of H.264 and MPEG4 are the same. This handler does not support VBR.

Continual Support

At any given time there is only one camera pack available for the VideoEdge NVR. This camera pack provides full support to all existing (updates and add-ons) and new cameras available for the VideoEdge NVR. The following is a list of all existing manufacturers and cameras supported by the VideoEdge NVR:

- American Dynamics
  - •American Dynamics eight channel encoder
  - •American Dynamics Fixed IP
  - •American Dynamics illustra 210 Series
  - •American Dynamics illustra 400 Series
  - •American Dynamics illustra 600/610/610LT Series
  - •American Dynamics IP SpeedDome Cameras
- ACTi Corporation Cameras
- Arecont Vision Cameras
- AXIS Cameras and Encoders
- Bosch Cameras
- CBC Cameras
- FLIR
- Panasonic Cameras
- Samsung Encoders and Cameras
- SONY Encoders and Cameras

General Limitations

- For all IP Cameras on NVR, the "Max Bit Rate" field may be available for certain cameras on certain codecs. This is currently not a supported feature on NVR 4.2 and NVR 4.2.1. In NVR 4.2.0 or later, the NVR does not provide any GUI for PTZ operations other than enabling PTZ and maybe Absolute Focus/Iris.

American Dynamics

Supported American Dynamics cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Video Encoders					
ADEIP8H	H.264, MJPEG	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADEIP8M	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
Box Cameras					
ADCIPEBPN	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPEBPPE	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPEBPPU	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPEBN	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPEBPE	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPEBPU	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
Indoor Mini Dome Cameras					
ADCIPE3312ICN	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3312ISN	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3312ICPE	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3312ISPE	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3312ICPU	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3312ISPU	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
Outdoor Mini Dome Cameras					
ADCIPE3712OCN	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3712OSN	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3712OCPE	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3712OCPU	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3712OSPU	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCIPE3712OSPE	MJPEG, MPEG4	Yes		4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
IP Dome Cameras					
ADVEIPSD22N	H.264, MJPEG, MPEG4	Yes	4/4	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
ADVEIPSD22P	H.264, MJPEG, MPEG4	Yes	4/4	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADVEIPSD35N	H.264, MJPEG, MPEG4	Yes	4/4	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADVEIPSD35P	H.264, MJPEG, MPEG4	Yes	4/4	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
illustra 210 Mini Dome Cameras					
ADCi210-D111	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D011	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D121	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D021	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D113	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D013	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D123	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi210-D023	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
illustra 600 Mini Dome Cameras					
ADCi600-D111	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D011	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D121	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D021	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D321	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D131	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D031	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D141	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D041	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D341	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D113	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D013	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D141	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D041	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D341	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D113	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D013	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D141	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D041	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D341	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D113	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D123	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D323	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D133	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
ADCi600-D033	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D143	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D043	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D343	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
illustra 610 Mini Dome Cameras					
ADCi610-D111	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D011	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D121	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D021	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D321	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D131	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D031	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D141	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D041	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D341	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D113	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D013	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D123	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D023	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D323	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D133	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D033	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D143	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D043	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
illustra 610LTMini Dome Cameras					
ADCi610LT-D111	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610LT-D113	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
illustra 600 Telephoto Lens Mini Dome Cameras					
ADCi600-D521	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D541	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D523	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi600-D543	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
illustra 610 Telephoto Lens Mini Dome Cameras					
ADCi610-D521	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D541	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D523	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
ADCi610-D543	H.264, MJPEG	Yes	1/1	4.1, 4.2, 4.2.1	Tested & Certified
illustra 400 WDR Indoor Mini Dome Cameras					
ADCi400-D011	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
ADCi400-D013	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-D031	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-D033	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
illustra 400 WDR Outdoor Mini Dome Cameras					
ADCi400-D021	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-D023	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-D041	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-D043	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
illustra 400 WDR Bullet Cameras					
ADCi400-B021	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-B022	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
ADCi400-B041	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
illustra 400 Box Cameras					
ADCi400-X001	H.264, MJPEG	Yes	1/1	4.0, 4.0.1, 4.1, 4.2, 4.2.1	Tested & Certified
illustra 600/610 Bullet Cameras					
ADCi600-B021	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi600-B041	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi600-B061	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-B021	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-B041	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-B061	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
illustra 600/610 Box Cameras					
ADCi600-X011	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
ADCi610-X011	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
illustra 600LT Bullet Cameras					
ADCi600LT-B021	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified
illustra 600LT Box Cameras					
ADCi600-X011	H.264, MJPEG	Yes	1/1	4.2.1	Tested & Certified

ACTi Corporation

This version of the VideoEdge camera handler is fully integrated with ACTi Corporation line of IP cameras. ACTi has number of API's (Application Programming Interface) camera handlers to communicate with their cameras. This version of the VideoEdge NVR is fully integrated with the ACM models (cameras using firmware version v3.13.16-AC) and TCM models (cameras using firmware version v4.11.09-AC). As ACTi continues to release new cameras to the market, the VideoEdge camera handler provides a generic camera driver that can connect to any ACM or TCM cameras not listed in the available camera list. The generic ACTi driver will gather the required information and present this to the VideoEdge NVR

Supported ACTi Corporation cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Fixed Cameras					
ACM5611				4.1, 4.2, 4.2.1	Works as designed
Bullet Cameras					
ACM1231				4.1, 4.2, 4.2.1	Works as designed
TCM1231				4.1, 4.2, 4.2.1	Works as designed
TCM1511				4.1, 4.2, 4.2.1	Works as designed
Cube Cameras					
ACM4201				4.1, 4.2, 4.2.1	Works as designed
TCM4201				4.1, 4.2, 4.2.1	Works as designed
Fixed Dome Cameras					
ACM3401				4.1, 4.2, 4.2.1	Works as designed
ACM3511				4.1, 4.2, 4.2.1	Works as designed
ACM3701				4.1, 4.2, 4.2.1	Works as designed
ACM7411				4.1, 4.2, 4.2.1	Works as designed
TCM3401				4.1, 4.2, 4.2.1	Works as designed
TCM3411				4.1, 4.2, 4.2.1	Works as designed
TCM3511				4.1, 4.2, 4.2.1	Works as designed
TCM7411				4.1, 4.2, 4.2.1	Works as designed
TCM7811				4.1, 4.2, 4.2.1	Works as designed
Box Cameras					

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
TCM5311				4.1, 4.2, 4.2.1	Works as designed
TCM5611				4.1, 4.2, 4.2.1	Works as designed

Arecont Vision

VideoEdge camera handler is fully integrated with the Arecont Vision line of megapixel cameras including full support for the 180˚ and 360˚ lines of panoramic view cameras. Arecont Vision cameras operating system (firmware) is continually evolving; please make sure your camera is running the most current firmware available from Arecont Vision (available from http://www.arecontvision.com)

VideoEdge camera handler supports the following firmware versions:

- **M-JPEG cameras** – firmware version 64327 or higher
- **H.264/M-JPEG cameras** – firmware version 65139 or higher

Supported Arecont Vision cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Fixed Cameras					
AV1115				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1115DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1115AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1125				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1125DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1125AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1300				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1300DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1300AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1305				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1305DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1305AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1310				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1310DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1315				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1315DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1325				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1325DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1325IR				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
AV2100				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2100DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2100IR				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2105				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2105DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2105AI				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2110				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2110DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2115				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2115DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2115AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2125				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2125DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2125IR				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2805				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2805DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2815				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2815DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2825				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2825DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2825IR				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3100				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3100DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3100AI				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3105				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3105DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3105AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3110				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3110DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3115				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3115DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3115AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3125				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3125DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3125IR				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3155				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV3155DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5100				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5100DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
AV5100AI				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5105				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5105DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5105AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5110				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5110DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5115				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5115DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5115AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5125DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5125AI				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Mini Dome Cameras					
AV1355				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV1355DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2155				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV2155DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5155				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV5155DN				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Panoramic Mini Dome Cameras					
AV8180				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV8185				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV8185DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV8360				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV8365				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
AV8365DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Note

Each of the 8xxx cameras are comprised of four individual cameras housed together as a “single camera”. Please make sure you have sufficient camera licenses available with your VideoEdge NVR. When adding cameras to the NVR ensure that four camera slots are available (e.g. when adding three separate cameras the first camera should be added to slot 1 (this camera will use slots 1,2,3,4), the second cameras should be added to slot 5 (it will use slots 5,6,7,8) and the third camera should be added to slot 9 (it will use 9,10,11,12), and so on.

AXIS Communications

VideoEdge camera handler is fully integrated with the AXIS communications line of IP cameras and video encoders. AXIS has number of API's (Application Programming Interface) camera handlers to communicate with their cameras. The VideoEdge NVR is fully integrated with the VAPIX® API Version 2 (cameras using firmware version 4.xx) and VAPIX® API Version 3 (cameras using firmware version 5.xx). As AXIS continue to release new cameras to the market, the VideoEdge camera handler provides a generic AXIS camera driver that can connect to any VAPIX® 2 & 3 camera. The generic driver will gather all required information, including camera name and functionality, and present it to the VideoEdge NVR.

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported (Minimum Camera Pack Version)	Certification
Encoders					
M7001				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q7401				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q7404				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q7406				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q7414				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
240Q				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
241Q				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
241QA				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
241S				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
241SA				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
241SIV				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
243Q				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
243SA				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
247S				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Fixed Cameras					
M1011				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M1011-W				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M1031-W				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M1054				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported (Minimum Camera Pack Version)	Certification
M1103				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M1104				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M1113				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M1114				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1311				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1343				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1343-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1344				4.0, 4.01, 4.1, 4.2, 4.2.1	Works as designed
P1344-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1346				4.0, 4.01, 4.1, 4.2, 4.2.1	Works as designed
P1346-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1347				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P1347-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q1755				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q1755-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
206				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
206-M				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
206-W				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
207				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
207-MW				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
207-W				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
210				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
210A				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
211				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
211-A				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
211-M				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
211-W				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
223M				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
225FD				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Fixed Dome Cameras					
M3011				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M3014				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M3113-R				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M3113-VE				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M3114-R				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M3114-VE				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M3203				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported (Minimum Camera Pack Version)	Certification
M3203-V				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3301				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3301-V				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3304				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3304-V				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3343				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3343-V				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3343-VE				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3344				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3344-V				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3344-VE				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3346				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3346-V				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P3346-VE				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
209FD				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
209FR-R				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
209MFD				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
209MFD-R				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
216FD				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
216FD-V				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
216MFD				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
216MFD-V				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
PTZ Cameras					
212PTZ				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
212PTZ-V				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
213PTZ				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
214PTZ				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
215PTZ				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
215PTZ-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
PTZ Dome Cameras					
P5512				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P5512-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P5522				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P5522-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P5532				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P5532-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
P5534				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported (Minimum Camera Pack Version)	Certification
P5534-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q6032-E				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q6034				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q6034-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
231D+				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
232D+				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
233D				4.0, 4.0.1, 4.1, 4.2, 4.2.1	Works as designed
M5013				4.1, 4.2, 4.2.1	Works as designed
M5014				4.1, 4.2, 4.2.1	Works as designed
Thermal Cameras					
Q1910				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q1910-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q1921				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Q1921-E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Bosch

Supported Bosch cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
AutoDome (Supported Firmware v15500552)					
VJR-821-ICCV				4.2.1	Works as designed
VJR-811-ICCV				4.2.1	Works as designed
VJR-821-IWCV				4.2.1	Works as designed
VJR-811-IWCV				4.2.1	Works as designed
VJR-821-ICTV				4.2.1	Works as designed
VJR-811-ICTV				4.2.1	Works as designed
VJR-821-IWTV				4.2.1	Works as designed
VJR-811-IWTV				4.2.1	Works as designed
VG5-825-ECEV				4.2.1	Works as designed
VG5-825-ETEV				4.2.1	Works as designed
NBN (Supported Firmware v5950050)					
Dinion NBN-498-28				4.2.1	Works as designed
Dinion NBN-498-28V				4.2.1	Works as designed
Dinion NBN-498-28WV				4.2.1	Works as designed
Dinion NBN-498-28W				4.2.1	Works as designed
Dinion NBN-921-P				4.2.1	Works as designed
Dinion NBN-921-2P				4.2.1	Works as designed
Dinion NBN-921-IP				4.2.1	Works as designed
Dinion NBN-832V-P				4.2.1	Works as designed
Dinion NBN-832V-IP				4.2.1	Works as designed
Dinion NBC-265-P				4.2.1	Works as designed

CBC

Supported CBC Cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Fixed IP Cameras					
MP1A				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
MP1DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
MP2A				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
MP2DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
MP3DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
MP5A				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
MP5DN				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Indoor Dome Cameras					
MP8D-L4				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

FLIR

In this release the VideoEdge camera pack is fully integrated with FLIR's D, PT and F series, multi sensor, pan tilt and fixed thermal security cameras.

The following cameras are supported with minimum camera firmware version *nexus-server-GD_v2.5.9.17*.

Supported FLIR cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Fixed Cameras					
F-112				4.1, 4.2, 4.2.1	Works as designed
F-117				4.1, 4.2, 4.2.1	Works as designed
F-124				4.1, 4.2, 4.2.1	Works as designed
F-304				4.1, 4.2, 4.2.1	Works as designed
F-307				4.1, 4.2, 4.2.1	Works as designed
F-313				4.1, 4.2, 4.2.1	Works as designed
F-324				4.1, 4.2, 4.2.1	Works as designed
F-334				4.1, 4.2, 4.2.1	Works as designed
F-348				4.1, 4.2, 4.2.1	Works as designed
F-606				4.1, 4.2, 4.2.1	Works as designed
F-610				4.1, 4.2, 4.2.1	Works as designed
F-612				4.1, 4.2, 4.2.1	Works as designed
F-618				4.1, 4.2, 4.2.1	Works as designed
F-625				4.1, 4.2, 4.2.1	Works as designed
F-645				4.1, 4.2, 4.2.1	Works as designed
F-VIS				4.1, 4.2, 4.2.1	Works as designed
Outdoor Dome Cameras					
D-313				4.1, 4.2, 4.2.1	Works as designed
D-324				4.1, 4.2, 4.2.1	Works as designed
D-334				4.1, 4.2, 4.2.1	Works as designed
D-348				4.1, 4.2, 4.2.1	Works as designed
D-618				4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
D-625				4.1, 4.2, 4.2.1	Works as designed
D-645				4.1, 4.2, 4.2.1	Works as designed
Multi-Sensor Pan Tilt Cameras					
PT-112				4.1, 4.2, 4.2.1	Works as designed
PT-117				4.1, 4.2, 4.2.1	Works as designed
PT-124				4.1, 4.2, 4.2.1	Works as designed
PT-304				4.1, 4.2, 4.2.1	Works as designed
PT-307				4.1, 4.2, 4.2.1	Works as designed
PT-313				4.1, 4.2, 4.2.1	Works as designed
PT-324				4.1, 4.2, 4.2.1	Works as designed
PT-334				4.1, 4.2, 4.2.1	Works as designed
PT-348				4.1, 4.2, 4.2.1	Works as designed
PT-606				4.1, 4.2, 4.2.1	Works as designed
PT-610				4.1, 4.2, 4.2.1	Works as designed
PT-612				4.1, 4.2, 4.2.1	Works as designed
PT-618				4.1, 4.2, 4.2.1	Works as designed
PT-625				4.1, 4.2, 4.2.1	Works as designed
PT-645				4.1, 4.2, 4.2.1	Works as designed

Panasonic Corp

VideoEdge camera handler is fully integrated with the Panasonic line of IP cameras. Panasonic, generally, doesn't change the core API interface for their cameras. VideoEdge camera handler is based on Panasonic core API package version 1.28, supporting both WV and DG versions of the listed cameras. As Panasonic continue to release new cameras there may be instances where specific Panasonic cameras are not listed in the available camera pack. A generic Panasonic camera handler is available for these cameras.

Supported Panasonic cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Fixed Dome Cameras					
NW484				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NW484S				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NW502S				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SF332				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SF335				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SF336				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SF342				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SF346				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SW352				4.1, 4.2, 4.2.1	Works as designed
SW355				4.1, 4.2, 4.2.1	Works as designed
NF284				4.1, 4.2, 4.2.1	Works as designed
NF302				4.1, 4.2, 4.2.1	Works as designed
PTZ Dome Cameras					
NW960				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NW964				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NS950				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NS954				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NS202				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NS202A				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SC384				4.1, 4.2, 4.2.1	Works as designed
SC385				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
SC395				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Fixed Cameras					
NP244				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NP304				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
NP502				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SP102				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SP105				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SP302				4.1, 4.2, 4.2.1	Works as designed
SP305				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SP306				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Samsung

Supported Samsung Cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Encoders					
SPE-100				4.2.1	Works as designed
SPE-400				4.2.1	Works as designed
Box Series Cameras					
SNZ-5200				4.2.1	Works as designed
SNB-2000				4.2.1	Works as designed
SNB-3000				4.2.1	Works as designed
SNB-3002				4.2.1	Works as designed
SNB-5000				4.2.1	Works as designed
SNB-7000				4.2.1	Works as designed
Bullet Series Cameras					
SNO-5080R				4.2.1	Works as designed
Fixed Dome Series Cameras					
SNV-5010				4.2.1	Works as designed
SNV-3080				4.2.1	Works as designed
SNV-3120				4.2.1	Works as designed
SNV-5080				4.2.1	Works as designed
SNV-5080R				4.2.1	Works as designed
SNV-7080				4.2.1	Works as designed
SNV-7080R				4.2.1	Works as designed
SND-3080				4.2.1	Works as designed
SND-3082				4.2.1	Works as designed
SND-3080F	‘			4.2.1	Works as designed
SND-3080C				4.2.1	Works as designed
SND-3080CF				4.2.1	Works as designed
SND-5080				4.2.1	Works as designed
SND-5080F				4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
SND-7080				4.2.1	Works as designed
SND-7080F				4.2.1	Works as designed
PTZ Series Cameras					
SNP-3120				4.2.1	Works as designed
SNP-3120V				4.2.1	Works as designed
SNP-3120VH				4.2.1	Works as designed
SNP-3371				4.2.1	Works as designed
SNP-3302				4.2.1	Works as designed
SNP-3302H				4.2.1	Works as designed
SNP-3371TH				4.2.1	Works as designed
SNP-5200				4.2.1	Works as designed
SNP-5200H				4.2.1	Works as designed
SNP-3430H				4.2.1	Works as designed

SONY

This version of VideoEdge camera handler provides full integration with the SONY line of Video Encoders and IP cameras. SONY has number of API's (Application Programming Interface) camera handlers to communicate with their cameras. The VideoEdge NVR is fully integrated with SONY's 3rd, 4th, and 5th generations of IP cameras. As SONY continues to release new cameras there can be instances where specific SONY cameras are not listed in the camera pack camera-list. A generic SONY camera handler is available in these instances.

Supported SONY cameras:

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Encoders					
SNT-EX 101				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNT-EX 101E				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNT-EX 104				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNT-EP 104				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNT-EP 154				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNT-EX 154				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
Fixed Cameras					
SNC-CS20				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH160				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH140				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH240				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH180				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH280				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH120				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH220				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH260				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CM120				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CS50N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CS50P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH110				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-CH210				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
Mini Dome Cameras					
SNC-DH140				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH140T				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH240				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH240T				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH280				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH120				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH120T				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH220T				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH160				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH260				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DS10				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DS60				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DM110				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DM160				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DF50N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DF50P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DF80N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DF80P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DF85N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNCDF85P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH220				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH110				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH110T				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH210				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH210T				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-DH180				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
PTZ Dome					
SNC-RS44N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RS44P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RS84N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RS84P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RS86N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RS86P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RH124				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RH164				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RX530N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RX530P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RX550N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Model	CODEC Supported	Audio	I/O	VideoEdge Versions Supported	Certification
SNC-RX550P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RX570N				4.0.1, 4.1, 4.2, 4.2.1	Works as designed
SNC-RX570P				4.0.1, 4.1, 4.2, 4.2.1	Works as designed

Camera Specific Release Notes

This section is a collection of camera release notes as provided with each camera release. This section provides detailed description for each manufacturer cameras, performance limitations and supported features.

American Dynamics 8 Channel IP Encoder (M&H)

Supported Key Functions

- Video Streaming – Single and Dual
- Video Codec – MJPEG, MPEG4 and H.264 and MPEG4 MJPEG
- Audio Streaming – Audio Codec are AAC, G.711 ulaw and G.711 alaw
- PTZ – Applies to analog cameras that have mechanical Pan, Tilt, and Optical Zoom
- Dry Contact Events – Camera is polled for dry contact event at 100ms interval
- Reset to Factory Defaults
- Query Device
- Reboot Device

Required Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username: user
- Password: user617

Limitations

- Changing the video source requires reboot of the encoder. During the reboot, the device will not respond.
- Changing the interlacing parameter would require the encoder to be restarted. During the reboot, the device will not respond.

- Changing streaming parameters like bit-rate, quality, frame-rate, key frame interval and others would require the stream to be restarted, hence a small glitch in play out might be observed during this time.
- Focus and Iris is not supported by thin Client Web GUI, because 8 Channel Encoder supports only relative value change and does not support absolute change of values. However it is supported in Pattern.
- Consecutive audio channel pairs should be configured with same codec otherwise RTSP will send a 500 message. Pairing as below {PCMU,PCMA},AAC.
- Due to the limitation in the Encoder firmware, the QCIF video stream uses the 172x112 resolution.
- “Pattern” cancel feature is not supported in a consistent manner. During “Pattern Cancel”, pattern recording is cancelled. Upon reinitiating the recording on a pattern, old recorded pattern sequence is overwritten.
- “Focus” and “Iris” support has been removed, to maintain consistency, the “Auto Iris” feature is also disabled.
- During Tilt having stopped at zero-tilt position in Dome camera where a flip of 180 degree happens, might leads to the camera tilting continuously.
- It has been observed that CBR operation for MPEG-4 at lower frame-rate settings is blocky and full of artifacts. To improve the same, a constant quality settings operating as VBR is found to be more effective. This has been incorporated in the solution.
- Due to the limitation in the encoder, simultaneous PT and Z operation using the encoder on a camera is not supported.
- Due to the limitation in the encoder while operating in resolution QCIF, GOP settings 2 and in CBR transmission mode, it is possible to observe up to 50% frame drops depending on the complexity of input scene.
- Bitrate / Quality or any streaming parameter changes using the encoder webpage does not reflect or take effect on the already started or existing streaming session. Either the encoder needs to be restarted or the streaming session needs to be restarted for these parameters to take effect.
- ADEIP8H PTZ zoom in feature can’t work with SpeedDome UD8(Pelco-P protocol).
- ADEIP8H PTZ zoom in and zoom out feature can’t work with Pelco Dome(Pelco-D protocol).
- ADEIP8H on rare occasions the MJPEG stream may send the bad frames that the fame size is only several dozen bytes.

Note

Please refer to AD 8-Channel IP Encoder (M) and (H) Release Notes for additional information.

American Dynamics Fixed IP Camera

Supported Firmware

- v1.57 or later

Supported Key Functions

- Video Streaming: Single
- Video Codec: MJPEG and MPEG-4
- Audio Streaming: Model specific, G.711 ulaw, A/V, single stream only
- Dry Contact Event - 1 Dry Contact, http poll for dry contact event at 100ms interval
- Query Device

Required Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username: admin
- Password: 9999

Limitations

- The camera will reboot when changing codec (audio or video), resolution, frame rate,key frame interval, video quality, audio volume, enable audio / audio in and any other audio / video properties. Reboots will take about 20 to 30 seconds and 1 minute to be back online.
- Single HTTP stream to send audio/video interleaved MPEG4 video.
- When camera is rebooted or codec is changed, adjusts focus under grey and will take 30 seconds to go to color.
- When changing codec from MJPEG to MPEG4, if the default bit rate is larger than 8000, an error message will be received when changing the video codec properties; the workaround is to change the bit rate to 8000 or lower than 8000.

Note

Please refer to AD Fixed Camera Release Notes for additional information.

American Dynamics Fixed Camera (illustra 400 series)

Supported Firmware

- v2.20 or later

Supported Key Functions

- Video Streaming – Single, Dual
- Video codec – H.264 and MJPEG
- Audio Streaming – G.711 ulaw and G.726, single stream only
- Dry Contact Events – Single. Camera is polled for dry contact event at 100ms interval
- Query Device
- Device Reboot

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username:admin
- Password:9999

Limitations

- The camera will reboot when changing codec (audio or video), resolution, frame rate, key frame interval, video quality, audio volume, enable audio / audioin and any other audio / video properties. The reboots will take about 20 to 30 seconds.
- All audio and video streams will be lost when the camera reboots. All audio and video streams will then need to be re-established.
- When the camera is rebooting, video and audio properties may not be available to get / set new value.
- Due to camera internal resource contention, both profiles (streams) must have the same resolution. If profiles (streams) are set to obtain different resolutions the requested FPS will not be obtainable for MJPEG.
- To achieve optimal H.264 Motion Detection results, the recommended settings are:
    - Stream 1 is H.264, 30fps, D1 or D2 resolution, default quality
    - Stream 2 is MJPEG, 7 fps, CIF, default quality
- For some properties' value are retrieved from camera itself (e.g. resolution, quality), result in that when user adds the camera, the return value is not the default value defined in the NVR, but the actually value in camera.
- VideoCodecKeyFrameInterval is not supported by the camera handler, but the user can change it from the camera web page.
- For AudioInputVolume, the microphone input and line-in input have different ranges.:
- Microphone input:
    - A setting of 'low (1)' is 20dB
    - A setting of 'high (10)' is 26 dB
- Line-in:
    - A setting of 'low (1)' is 6 dB
    - A setting of 'high (10)' is 18dB.
- Due to camera internal resource contention, changing the resolution or quality or bit rate may affect the frame rate performance. Please refer to camera limitation.
- Changing the video codec/audio codec may cause the RTSP service in the camera to crash, and can't get the video/audio streaming, the workaround is to reboot or power cycle the camera
- With camera firmware v2.20, the FPS selections for the MJPEG codec from the camera web GUI shows only "3,5,7,10,12,15,30" for NTSC and "3,5,7,10,12,15,25" for PAL. This, however, does not affect the FPS selections from the VideoEdge client, which remain supporting 1 - 30 for NTSC and 1-25 for PAL.
- To meet the single stream fps, the user can enable dual stream on NVR, configure the stream codec/resolution/fps/quality for Stream 1 and then configure Stream 2 to lowest resolution/fps/quality. Once Stream 2 is configured the user can disable Stream 2 on the NVR. Alternatively the user can access the camera's web GUI settings to change stream 2 to the lowest/resolution/fps/quality.

Note

Please refer to the AD illustra 400 Camera Release Notes for additional information.

American Dynamics Fixed Camera (illustra 210, illustra 600 and illustra 610 Domes)

Supported Key Functions

- Video Streaming
- Audio Streaming – Supports G711mulaw stream (600/610/210). illustra 610LT does not support audio.
- Dry Contact Events – Single camera is pulled for Dry Contact at 100ms interval (600/610/210). illustra 610LT does not support dry contact events.
- Query Device
- Reboot

Unsupported Key Functions

- PTZ Operation
- Power off devices
- Get device log
- Find Devices
- Reset to factory default

Audio/Video Streaming Feature

- Supports both MJPEG and H264 codec.
- Camera will takes around 25-seconds to restart network services after changing the codec or resolution settings.
- Supports two video streams at the same time
- The rtsp audio only stream URL is

  rtsp://camera_ip:7777/audio.
- The rtsp video only stream URL is

  rtsp://camera_ip:7779/primarystream

rtsp://camera_ip:7781/secondarystream (handler uses this).

- The rtsp A/V mixed stream URL is

  rtsp://camera_ip:7778/primarystream

  rtsp://camera_ip:7780/secondarystream.

- The end user can modify the port numbers via camera webpage.
- Handler will select one stream from camera, so the rtsp URL for MJPEG or H264 can be either of these two URLs

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTP/RTSP

Default Username & Password

- Username: admin
- Password: admin

Limitations

- When the primary and secondary streams are configured with the same codec, changing stream on the NVR may change the opposite stream to the one you wish to change. The illustra 600 primary and secondary streams configuration will not necessarily reflect stream one and stream two on the NVR. The camera only identifies the streams by the stream codec (ignoring FPS and resolution). In some instances when NVR streams are both configured with the same Codec, changing one of the streams will not necessarily change the parameters on the specified stream.
- illustra 600/610 camera only supports one 720P/1080P stream. If there is one 720P/1080P stream on the NVR, it is impossible to set another. Please refer to the camera limitation.
- If the secondary stream is enabled via the Camera Web GUI, the camera will keep streaming even when no user requires the stream. To meet the FPS set in the NVR, the other stream should be set to a lower resolution, quality and FPS. Please refer to the camera FPS limitation document.
- To meet the single stream fps, the user can enable dual stream on NVR, configure the stream codec/resolution/fps/quality for Stream 1, and then configure Stream 2 to lowest resolution/fps/quality. Once Stream 2 is configured the user can disable Stream 2 on the NVR. Alternatively the user can access the camera’s web GUI settings to change stream 2 to the lowest resolution/fps/quality.
- Changing codec and/or resolution will cause the network service to reboot; this takes about 25 seconds. It will continue to deliver previous video/audio streams in the first 15 seconds. During this time, the camera will be offline. If the user refreshes the NVR web GUI, the properties will be “unknown”, the camera may still be rebooting. If the video stream is not created successfully, the properties will show “unknown”.
- For some properties, values that are retrieved from the camera itself (such as resolution or quality), when a user adds the camera, the return value is not the default value but the value defined by the camera.

- NVR only supports audio in 8KHz.
- illustra 600, add 720p and 1080p resolution for MJPEG stream, change the codec or resolution of stream 1 will report an error. illustra 600 camera only supports one 720P/1080P stream. If there is one 720P/1080P stream on the NVR, it is impossible to set another. Please refer to the camera limitation.
- Auto Exposure switch appears to occur earlier than expected for 720p PAL and 1080p camera.
- The GOP of H264 must be below 120. If the GOP is too big, several seconds are needed to create a key frame. This will cause a mosaic image effect when opening the NVR if it is not a I-Frame. It is suggested to set the GOP size the same as the frame rate. On the camera, the default factory GOP is 30 for NTSC, 25 for PAL, it is not recommended to change this.
- When changing the FPS, the corresponding RTSP stream will restart. This may result in a minor video loss dependent on the GOP size configured, because the video needs a key frame.
- It is recommended to configure the camera within the camera FPS limitations. If the parameters exceed the limitations, the camera performance may be affected.
- Rebooting the camera to factory default can resolve the camera performance. Once this is complete, reconfigure the camera within the camera FPS limitations.
- NVR does not support changing the quality of H264.
- Although the NVR does not support changing the quality of H264, this can be managed through the camera web GUI. To support dual streams, it is recommended the interval between changing codec/resolution should be greater than 30 seconds. Otherwise the camera may keep rebooting.
- Dry contact messages that have been lost on the NVR maybe received if the camera is set beyond camera FPS limitations. Please refer to the camera FPS limitation document.
- When changing the codec of steam 1 in an NVR that has dual streams, the error “unable to determine stream 2 – malformed request” will be reported. When the “back” button (refresh in the web GUI) is clicked, the codec will have changed to the configured codec. This is a limitation.
- If Motion Meta Data is enabled, changing codec/resolution of stream1 or stream2 after the camera reboots, the Motion Meta status will be disabled. This is a limitation.
- If the default exposure is configured on the illustra 600 or 610, a 2 to 3 second video freeze will be experienced as the camera changes mode from day to night. When the available light caught by the camera lens drops sufficiently, the camera changes from Day mode (color images) to Night mode (black and white images). This freeze is related to the time it takes the camera lens to readjust to the light difference when it is set to the default exposure rate and the effect on the NVR as the mode changes over. A workaround for this is to increase the exposure setting. This is a limitation.
- For resolution/frame rate/quality limitation, refer to the camera FPS limitation document.
- Video and audio may become out of sync when navigating playback to specific times on the victor Client clips.
- If the codec on the camera primary stream is MJPEG, when this camera is added into a NVR, the camera will need to change the codec to H264 and reboot. The camera will be offline for about 20 seconds
- Wrong video timestamp will make NVR create a lot of sessions and have a minor video loss in playback.
- If a user changes the rate control of an illustra 210 model on the Camera Web GUI to VBR it may cause a pulsation effect on the H264 stream when using default resolution, FPS and quality values. The Default for the Rate Control is CBR.
- The Factory default values for the illustra Camera models are:

•illustra 210 = H264, Maximum available Fps, D1

•illustra 600 = H264, Maximum available Fps , 1280X720

•illustra 610 = H264, Maximum available Fps , 1920X1080

Special Points

- Some properties are normalized to a percentage (1-100), but the real value in camera is a range from -127 to 128. This results in the values in the NVR not covering all values in the camera.
- The same illustra 600 series camera should not be added to more than one NVR.
- When the camera is added to NVR, it is recommended not to change settings from the camera web page (especially video and audio) because the change may need to reboot the video codec and this will affect the NVR.
- When changing the video resolution, frame rate, quality, bit rate, audio codec, the code stream will reboot. At this time, the related property cannot be accessed.
- Resolutions on stream1 and stream2 cannot be changed at the same time.
- 610LT models have removed some functionality available in the 610 standard models. This removed functionality is IR illuminator support, SD card support, and TV input/output support.
- The illustra 210 models have no support for Region of Interest, Face Detection and Pseudo Multi Pass Encoding.

American Dynamics Fixed Camera (illustra 600, 610 and 600LT Series Box and Bullets)

Supported Firmware

- v1.0.16 or later

Supported Key Functions

- Video Streaming (MJPEG, H.264 and Dual Streaming supported)
- Audio Streaming
- Dry Contact Event (1 Contact Polling every 100ms)
- Query Device
- Reboot

Unsupported Key Functions

- PTZ Operation
- Power off Devices
- Get Device Log
- Find Devices
- Reset to Factory Default

Audio/Video Streaming Feature

- The rtsp audio only stream URL is:

  rtsp://camera_ip/audio.sdp
- The rtsp video only stream URL is:

  rtsp://camera_ip/video.sdp

  or

rtsp://camera_ip/video2.sdp

- The rtsp A/V mixed stream URL is:

  rtsp://camera_ip/live1.sdp

  or

  rtsp://camera_ip/live2.sdp

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTP/RTSP

Default Username & Password

- Username: admin
- Password: admin

Limitations

- When a factory defaulted camera is added to an NVR, the default settings are: H.264, 7 FPS, CIF. When the user wishes to change the settings they can for single streaming increase the FPS and resolution to max and click Save. For dual streaming, user can enable 2nd stream by selecting Alarm or Record. They should change the codec to MJPEG and click Save.
- To meet the highest single stream FPS, the user can enable dual stream on the NVR, configure the stream codec/resolution/fps/quality for Stream 1, and then configure Stream 2 to lowest resolution/fps/quality. Once Stream 2 is configured the user can disable it on the NVR. Alternatively the user can access the camera's web GUI settings to change Stream 2 to the lowest resolution/fps/quality. For some properties' the value is retrieved from camera itself (resolution, frame rate, quality, brightness, contrast, sharpness) result in that when user adds the camera, the return value is not the default value defined in the NVR, but the actual value in camera.
- The camera will reboot when changing codec (audio or video), resolution, frame rate, key frame interval, video quality, audio volume, enable audio/audio in or any other video/audio properties. Average time for reboot is 30 seconds.
- Changing the video/audio codec or resolution may cause the RTSP service in the camera to crash. With the camera failing to restart and set new streams, the workaround is to reboot or power cycle the camera and reset stream settings.
- All streams will be lost when camera reboots and be automatically reestablished on startup.
- When the camera is rebooting, NVR video and audio properties may not be available to get or set. Any changes made to these settings during reboot time will not be saved.
- In the NVR, under image settings the Video Standard will always display NTSC in the dropdown list, irrespective of it being NTSC or PAL. For PAL cameras, FPS will show 25 as max FPS.
- When the primary and secondary streams are configured with the same codec on the camera web GUI, changing stream on the NVR may change the opposite stream to the one you wish to change. Stream 1 and Stream 2 on the NVR will not necessarily reflect primary and secondary

steams configuration on the camera. The camera only identifies the streams by the stream codec (ignoring FPS and resolution). In some instances when NVR streams are both configured with the same codec, changing one of the streams will not necessarily change the parameters on the specified stream.

- It is recommended to configure the camera to the cameras FPS limitations. If the parameters exceed the limitations, the camera performance may be affected. Factory defaulting the camera, and adding to an NVR can resolve this performance issue. Once this is completed, reconfigure the camera stream without exceeding stream limitations. Please refer to camera release notes.
- If the dual stream resolution/FPS is high, the video may be abnormal, a reboot or factory default may resolve this issue.
- Changing the resolution, quality or bit rate of either stream (even when second stream is not active) may affect the frame rate performance. Please refer to the camera release notes for additional information.
- The NVR handler does not support changing the quality of H.264, this can be managed through the camera web GUI.
- It is recommended to only change one video codec parameter at a time to avoid stream corruption.
- Due to the 2 variants of FPS supported by either MJPEG or H.264, it is recommended to first only change the codec, and then change the resolution and frame rate, or the operation will fail.
- Video and audio are out of sync when playback in victor unified client while live view is sync.
- Wrong sequence number in RTSP video stream is received in NVR which causes missing frame.
- After soaking for 4 days, video disordered and large timestamp in video is observed. Normal interval is circa 5000 but 200000 is found.
- The NVR handler does not support *VideoCodecKeyFrameInterval*, but the user can change it from the camera web GUI.
- Jitter will be observed in live view via the NVR and victor, due to camera performance limitations. This due to the camera taking more than 33 ms to send out the key frame. This does not happen in recorded video. Refer to camera release notes.
- RTSP and HTTP stream might be unavailable when user frequently change codec, resolution and FPS too quick. A waiting time of 2 minutes is recommended.
- i600 & i610:WW: When dual streaming with CBR set to 4M, when enabling motion detection and recording to SD card, FPS will drop to less than 10 FPS. This is due to a camera performance limitation. Please refer to camera release notes.

Special Points

- Do not add the same camera to more than one NVR.
- When the camera is added to NVR, it is recommended not to change settings from the camera web page (especially video and audio) because the change may need to reboot the video codec and this will affect the NVR.
- There is a jitter on H.264 streams if opening dual streams for illustra 610 cameras. (Stream 1: H.264,1920x0180 25 FPS & Stream 2: JPEG, CIF, 7 FPS). To improve performance, lower the Frame Rate or resolution of the second stream.
- When changing between PAL and NTSC, the FPS will change as the same rule. The maximum FPS will raise to 30 when PAL is set to 25 and changed to NTSC

- It may take 2 minutes when changing other FPS to 3 FPS. The reason for this is a mismatched GOP and frame rate will cause a longer re-connection time due to waiting for another frame. GOP size is much larger than Frame Rate, it may take a longer time for video to restart.
- Some properties are normalized to a percentage (1-100), but the real value in camera is a range from 0 to 255. This results in the values in NVR not covering all values in camera.

American Dynamics IP SpeedDome

Serial Number

NVR will use the camera's MAC address as the camera serial number.

Supported Key Functions

- Video Streaming 4 max
- Video Codec –
- MJPEG, MPEG4 and H.264
- Audio Streaming – Audio codecs are AAC, G.711 ulaw and G.711 alaw. No PCM audio stream
- Mechanical Pan and Tilt and Optical Zoom
- Dry Contact Events – Up to 4 dry contact events are support. The camera is polled for dry contact event at 30s interval.
- Query Device

PTZ Methods

- PTZSpeed
- PTZNudge: Zoom, Pan, Tilt
- PTZFilp
- Preset: Add, Set, Select, Clear Preset
- Pattern: Select, Record (Begin, End, Cancel), Clear

Required Network Ports

- Port 5001 is for IDP (command and control)
- Port 554 is for RTSP

Default Username & Password

- User name: admin
- Password:admin

Bandwidth Efficiency

Bandwidth efficiency has been improved for American Dynamics IP SpeedDome cameras running firmware version 2.0 or later.

The VideoEdge NVR will use an algorithm to control video quality according to the camera firmware version. If version is less than 2.0, the video quality will be altered by changing cameras quality value. If version is 2.0 or later, the video quality will be altered by changing the camera's bitrate value. The conversion from quality to bitrate is:

Camera Firmware	Approx Bitrate at Quality Setting (Max FPS, Max Resolution)				
	20	**40**	**60**	**80**	**100**
PAL v1.x firmware	1,140,000	5,240,000	9,220,000	16,780,000	25,160,000
NTSC v1.x firmware	1,180,000	5,320,000	8,160,000	15,100,000	24,750,000
PAL v2.x firmware	278,600	557,000	1,080,000	2,130,000	4,220,000
NTSC v2.x firmware	290,000	550,000	1,070,000	2,120,000	4,200,000

Note

Since the NVR uses CBR to control bitrate, the bandwidth of H.264 and MPEG4 are the same. This handler does not support VBR.

Limitations

- Only one audio stream (G711aulaw or G711mulaw) can be used at one time
- Dual video streaming supports H.264/MJPEG and MPEG4/MJPEG, but does not support H.264/MPEG4.
- No PCM audio stream
- Unable to add an IP SpeedDome if it is beyond the IP broadcast range of the NVR
- If Auto Flip is disabled, then the amount of distance of tilt down will be larger when it is close to -90 degrees than other positions.
- If Auto Flip is enabled, then the tilt down operation in NVR will lock the motor which make auto flip failure because the tilt down in NVR is not continues (e.g. moveBy) and the moving amount of distance is very tiny.
- Camera digital PTZ is not supported in this release. So it is not implemented normalization for digital PTZ part.
- In H.264 single stream, the maximum frame rate is 20fps @ D1 resolution @ quality 70.

- The maximum frame rate in dual streaming mode is:
    - When codec is H.264/MJPEG:
        - The maximum frame rate for the H.264 stream is 15fps @ D1 resolution @ quality 70, or 25fps @ 2CIF resolution @ quality 70, or 25fps @ D1 resolution @ quality 40; while the secondary MJPEG stream is 7fps @ CIF resolution @ quality 70
    - When codec is MPEG4/MJPEG:
        - The maximum frame rate for the MPEG4 stream is up to 30fps at any resolution and quality if the secondary MJPEG stream is set to 7fps @ CIF resolution @ quality 70. If the secondary MJPEG stream is set to 25fps @ D1 resolution @ quality 70, then the frame rate for the MPEG4 stream is up to 25fps @ D1 resolution @ quality 90.
- The zoom speed is fixed.
- Audio will not work unless it is enabled through the camera web interface.
- In victor, the Iris restore button does not work for ADIPDome Camera on victor Surveillance view.

Known Issues

- When using IP Dome firmware 2.0.0.645 for streaming H264 only, users should not use rewind instant play back with victor client. Users should use Search and Retrieve, or don't configure using a H264 stream.
- The default values for some properties defined on NVR are different from camera's default.
- The dry contact state always returns unknown.
- The definition of preset and pattern in NVR might be changed by user via web-client.
- The NVR will not recognize any presets or patterns already on the dome when it is added to the NVR.
- The NVR will not recognize any presets or patterns added to the dome via its web interface and in fact the NVR may overwrite them.
- Preset and pattern definitions made on the NVR will be mirrored to the device, but not the other way around.
- Preset and pattern definitions should be retained in case of network loss or disconnection / reconnection.
- Preset and pattern definitions will not be deleted when the dome is deleted from the NVR.
- Clients should show only the presets and patterns that have been defined using the NVR (not all 96 slots, defined or not). Presets and patterns defined through the device web configuration will not be shown
- When using the settings H.264 codec, D1 resolution, 25/30 (PAL/NTSC) FPS and the quality is above 90, video will freeze when opening Live View.
- Iris restore button does not work for when using surveillance with victor.

Note

Please refer to the AD IP SpeedDome Release Notes for additional information.

ACTi Corporation

Supported Key Functions

- Video Streaming
- Query Device
- Dry Contact Events
- Reboot

Unsupported Key Functions

- Audio Streaming
- PTZ
- Power Off
- Get Log
- Restore Factory Defaults
- Find Device

Minimum Firmware

- For ACM models – v3.13.16-AC
- For TCM models – v4.11.09-AC

Required Network Ports

- Port 80 is for HTTP
- Port 7070 is for RTSP

Default Username & Password

- Username: admin
- Password: 123456

Supported Resolution

All resolutions less than or equal to 1280x720 are dynamically acquired by the camera.

Limitations

- Resolutions larger than 720p are unsupported due to an incompatible algorithm used by the camera when the stream's resolution is larger than 720p.
- HUE feature on all cameras is unsupported, due to the manufacturer’s firmware team's recommendation not to change HUE and not to use VIDEO_HUE command for ACTi cameras.
- Due to camera limitation, the actual frame rate might be higher or lower than the requested frame rate. (Please refer to ATP results).
- For some cameras, RTP stream is not enabled by default. The handler will enable it before creating the stream pipeline. Do not change the stream method while configured on the NVR.
- By default, the B2 header function of the camera is enabled, which is not supported by the NVR. Therefore, the handler will disable this function when a camera is added to the NVR. Don't enable B2 header while camera is added to NVR.
- Dry contact active state in NVR is read-only, this cannot be modified.
- The scope of the image will be changed with a change of resolution, but the base pointer is neither the image’s corner nor center.
- The handler will use FPS as GOP. This is because when the camera streams on the RTP protocol, GOP is fixed to 0, which means 1 key frame per second.
- Due to the camera's FPS limitation. When single/dual streaming the FPS available is dependent on several factors e.g. a codec or resolution change may cause FPS on both streams to change.
- Due to the camera's limitation, camera will add to NVR with a lower FPS than supported. When adding a dual streaming camera to the NVR both streams’ codec will be set to H.264 highest resolution. Even if the second stream is not actively configured on the NVR, it is still affecting full FPS performance on stream one – in order to extend stream one FPS the user is required to lower the resolution on stream two.
- The hander will restart the stream when the resolution or codec is changed, which may cause a video loss for a few seconds.
- The contrast in camera web GUI displays as 0-100, but the vendor asked us to support 1 to 100, so the contrast supported in NVR GUI is 1-100.
- Focus and iris functions are excluded from support, because all cameras do not support them. However it is possible that future cameras will support these functions.
- WDR feature is currently not supported due to the related API VIDEO_WDR not working correctly on the official release.
- If the FPS is set to variable mode in the camera's web GUI, the NVR field for FPS will automatically become read only.

- The ACTi generic camera driver will not support the following features:
    - Image settings:
        - •Lens day/night mode
        - •Brightness
        - •Contrast
        - •Sharpness
    - H.264 stream
- Resolutions larger than 720p are unsupported. Should a camera support a higher resolution, this will not be available via NVR.

Known Issues

- The TCM3511 has an issue with Reverse playback in the VEClient. The user will experience a stutter with the H.264 stream due to the first key frame being received every second.
- Interval between video frames (frame spacing) is not always stable, but video is not affected - no video freeze, stutters or pixellation have been observed.
- Due to camera stream limitations, in dual streaming a change in codec or resolution on one stream may cause another stream's FPS to be changed. The handler is not able to force the NVR camera details to refresh the web page, therefore, the displaying FPS may not be right. Refreshing the web page will update the properties.
- The minimum FPS recommended for ACTi stream configuration should be above 3, due to FPS 1 or 2 causing the following issues:
    - NVR and victor refresh frequently (including the Video panes refreshing)
    - The time stamp interval between the nearest frames is incorrect

Error Messages

- Sometimes adding an ACTI camera onto the NVR may fail with a timeout message. This is caused by 1) APIs for codec and FPS work very slowly. Codec API may take up to 4.9 seconds and FPS API may take up to 2.5 seconds. Or 2) as specified by ACTI support, frequent API calls may cause the camera to work abnormally.

  Resolution: Add camera to NVR again.

  To avoid this issue, it is recommended configure camera as following before add to NVR:

  ACM: @ MJPEG @Highest-Resolution @highest-fps

  TCM: Dual stream @H.264 @ Highest-Resolution @highest-fps
- Restoring factory defaults may cause the camera to 1) crash; 2) NVR report timeout when adding it into NVR; 3) Camera to report "Please contact your provider. Error code: 00000001, other error" when trying to connect to the camera GUI.

  Resolution: Hardware reset
- Camera may crash when POE/power cable are unplugged and plugged in again. When the issue happens, the camera's web GUI may display "01072915212: Rtsp:Error. Create socket 01072915214:Rtsp:Error. create socket".

Resolution: Power Cycle first. If problem persists, carry out hardware reset.

- Sometimes the camera's web GUI will report "Error: Streaming Engine is not running", when the issue happens there is no stream given out. The camera can be restored after a manual reboot.

  Resolution: Hardware reset

- Sometimes modifying contrast or saturation will cause the camera to crash, when this happens, the user may receive the following message on the camera's web GUI: "Please contact your provider. Error code: 00000001, Other error".

  Resolution: Hardware reset

Special Points

- Do not factory default unless necessary, because sometimes it may cause many issues (refer to above known issues and limitations)
- Do not modify the camera's root user name. This is because the NVR only supports a password change.
- Do not add one camera into two or more NVRs.
- When the camera is added to the NVR, it is recommended not to change settings from the camera web page.
- When the camera is added onto the NVR, do not turn off "stream on RTP" setting, this will cause camera stop providing a live RTP stream.
- When the camera is added into NVR, do not change B2 header setting, this will cause the NVR to be unable to parse the stream.
- Only constant FPS mode is supported in RTP streaming due to camera limitation.
- The NVR Video smoothing function is enabled on this handler because the NVR stream refreshes frequently when it is disabled.
- NVR will display 1 when the camera's contrast setting value is 0. Refer to above limitation for detail.
- Handler had hard coded the camera's connection count to 1. Because the connection count is missed in some cameras' response data.
- Before adding a camera onto the NVR, it is recommended to set the settings as close as the handler defaults (H.264 / MJPEG 5FPS 1280x720) , otherwise adding action may fail with a timeout error. Refer to above known issues.

Arecont Vision

Supported Key Functions

- The Arecont Vision AV8xxx employs four, two-megapixel cameras in 180˚ or
- 360˚ panoramic views. Models are available in a variety of options including H.264
- or MJPEG video formats, Day/Night, Heater/Blower, recessed or IP66 housings.
- Using the American Dynamics victor unified client, operators can view
- each image independently or combination of them in a multi camera view in victor.
- Video Streaming – Single and Dual
- Video Codec – MJPEG and H.264 (Note: AVxxx0 models only support MJPEG)
- Query Device

Camera Serial Number

NVR will use the camera's MAC address as the camera serial number.

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username: admin
- Password: <The password should be left blank>

Limitations

- The AV8xxx will be viewed with Victor Client. Not all functionality is supported by the Web-Client
- VideoEdge Version 4.0 had a limitation for motion detection data generation of M-JPEG stream with video resolution greater than 4CIF/D1. VideoEdge version 4.1 increases the resolution to 1280x960 supporting second stream from a megapixel camera.
- VideoEdge 4.2 (as with VideoEdge 4.0 and 4.1) requires a minimum of four (4) frames per second to provide reliable motion search results. Due to the limitation of the Arecont Vision camera to produce two streams at the minimum frame-rate required for motion data generation video motion search performance will vary.
- The AV8xxx provides an option to “Equalize Brightness” across all four imagers. This will cause all the lenses to have the same brightness as the first lens. The VE-NVR camera handler has this value unassigned when cameras are added. If the camera has this value set by the camera’s web configuration page the camera’s brightness cannot be changed by the NVR.
- Due to camera performance limitation and network status, refreshing the camera list within the Victor Client may take 0.1 to 1 second to get each property from the camera. In addition changes to properties on the VE-NVR may take 2 to 30 seconds.
- It is highly recommended to have all four inputs from the camera set to the same storage section in the VE-NVR. Mixing may cause mixed retention times for some inputs compared to others.
- AV818X is an 180˚ view camera. Its layout is 4x1 and its sequence is “1,4,2,3”. Therefore to display a full view of 4X1, Victor Client should be used. In order to display all cameras correctly the images of input 1 and 2 are inverted 180˚ by default.
- AV836X is a 360˚ camera. Its layout is 2x2 and its sequence is “1,2,3,4” and has no rotate issue (all are the same).
- Different Arecont panoramic camera models may produce different bit rates for the same scene.
- The NVR 4.1 motion detection can only handle a resolution of 800x600 (or 800x592), not 1600x1200 (or 1600x1184) for AV8XXX cameras. (Maximum resolution for NVR to handle motion detection is 1280x960)
- Due to camera limitation, the actual frame rate may be lower than the requested frame rate.
- Due to camera RTSP performance limitation, for AV8XXX series, the camera can only deliver approximately 2 FPS per lens.
- All four inputs from the camera should be set to the same storage section, otherwise retention times for some of the inputs may be different than others.
- Streaming large amounts of data to Quicktime may cause a distorted image to appear. This is due to Quicktime or the network card on the host on which Quicktime is running, may be unable to cope with large bit rate streams particularly during the start up of H.264 due to the bursting of all frames since the previous Key frame. This result may be a green/mosaic screen especially on motion scenes. This may occur for both live and historic playback on NVR and Victor client.
- Due to the camera firmware issue on AV8185DN, the camera stream may restart on the NVR.
- Due to camera MJPEG video stream non-compliance, motion detection might not work.
- Due to the camera limitation, the bitrate and quality cannot be set through the camera’s web interface. The bitrate and quality values have to be included in the RTSP URL for them to work.
- Due to NVR 4.1 motion detection only handling resolution up to 1280x960 for AV1XXX, AV8XXX, AV2100, AV2105 and AV2110, motion detection can only handle resolution as half.
- Due to camera limitation, for Arecont cameras all MJPEG only cameras (Arecont: AVxx00, AV8180, AV8360 – CBC: MP1A, MP2A, MP5A and MP8D-L4) will stream at a higher FPS (reaching max FPS) when setting to 15FPS. FPS of 14 and lower are not affected by this issue.

- When upgrading the camera handler pack, note that the parameters of video streams may be changed to the default values. It is recommended to recheck video codec parameters when upgrading or restoring configuration backups.
- For AV8XXX cameras, motion detection can only be enabled if single MJPEG is set for every lens.

Known Issues

- For JPEG cameras (AV8180, AV8360, fw version: 65010), if we set the password to the user (admin), the JPEG stream can't be retrieved by GSTREAMER (although using the correct user and password). It seems there is bug in the camera's http server. (Lack of one CRLF when doing unauthenticated request, the same as AV1300, AV2100 etc MJPEG single lens camera)
- For H.264 camera (AV8185, AV8365, fw version: 65031), if we set the password to the user (admin), the H.264 stream can't be retrieved by GSTREAMER (although using the correct username and password). It seems there is a bug in camera's RTSP server. (It returns a bad response when doing unauthenticated request.) MJPEG stream can be retrieved normally by http using user and password. New firmware (version 65043) has no such issue.
- DN cameras (AV8185DN, AV8365DN, fw version: 65166) have no such issue.
- For AV8365 (and AV8185, and all their DN cameras), the full resolution is 1600x1184 and the half resolution is 800x592.
- AV8185DN (AV8365DN) sometimes changes the rtp SSRC value when in streaming. The work around is to replace the flowing SSRC with original one in current handler. It may impact performance a little. According to Arecont, firmware release 65166 should fix this issue, however it has not yet been verified AV8185DN continuous recording: new sessions start more often than expected (5 streams were opened).Sometimes the camera may stop to transfer data of one stream in a short time, such as no data received for MPEG stream in 3 seconds, which caused GSTREAMER to think the stream is broken. This is a firmware issue, awaiting resolution. AV8185DN – NVR receiving H.264 frames with timestamp prior to last one received. This is a firmware issue. Arecont has supplied a beta firmware which resolved it. Awaiting formal release.AV8185 series - observed 7 seconds of video loss on camera stream several times.. This is a firmware issue.
- For some properties' values are retrieved from the camera itself (e.g. resolution), result in, when an Arecont camera is added to the NVR, the return value is not the default value defined in the NVR, but the actual value in camera.
- For Models AV1300, AV2100DN etc. (MJPEG VERSION), the latest firmware version is 64328 (AV2100 64327). When the camera is set a password, and get JPEG stream by HTTP using incorrect password, the HTTP response is missing one CRLF, which causes the GSTREAMER to get stream failed.
- For Arecont's MJEPG version cameras, the D/N camera does not return suffix DN for the model. So NVR will not get D/N option.
- On Internet Explorer, if changing the default user name and password, the camera may not be accessed successfully.
- Two streams cannot use the same codec, which means if stream 1 with H.264, then stream 2 must be MJPEG.
- Due to camera firmware defect, the camera does not return the full model name, the NVR cannot support the daynight and auto Iris settings for all the Arecont cameras. The settings can be configured in the settings via the camera web GUI. (Note: Please refer to the Arecont Vision Camera Release Notes published by Arecont Vision for additional information.)
- A number of Arecont cameras have been identified as having firmware issues where cameras may unexpectedly stop sending Frames for a short time (3-7 seconds). In some instances this

will trigger a lost video alert. Cameras where this issue has been observed are AV3115DN, AV5125IR, AV8185DN.

Considerations

- Arecont only support two resolutions, one is half, the other is full, and we will convert it to width x height according to the actual picture size.
- MJPEG over RTSP is not supported.
- Video Codec Properties are all set to DB. The properties on camera's web page are not used, and these settings are for default stream fetching by web.
- Internet Explorer may cache the history data, if Internet Explorer is used to get the properties of an Arecont camera by the direct URL (such as http://<ip>/get1?brightness), a page refresh should be used to get new data.
- Brightness and sharpness are set to Arecont camera. So changing these values on web page of camera will change the values displayed on NVR.
- NVR's value range can't cover all the values of the device.
- Camera's range is -50, 50 and NVR's range is 1,100. The normalization will be: -50,-41 to 1,10 and -39,50 to 11,100. -40 is not normalized. When the value is read from camera, it is normalized to 11.
- The range of image quality of MJPEG is (1, 21). So the normalization will be: 1, 20 2, 24 … 21, 100
- Arecont default has blank username and password. Users can use any password or username to access the camera. But if the password has been set to user admin or viewer, users should use correct username and password to access the camera. Only by doing "Factory default" can set the password to be blank. (NOTE: a blank password does not mean ZERO length string. If user empties the password input in camera's web page, and saves to the camera, still means there is a password set.)
- The VideoCodecKeyFrameInterval is the same for all 4 lenses. The default value is set to 30 by the handler and the camera's default value is 51. (NOTE: the panoramic camera's register address for key frame interval setting is [3:100] not as the individual camera's [3:21]. The setting value is the p frames number between I frames, not containing I frame. (For example, if user wants to set key frame interval 30, the http command should be http://<cameraip>/set?page=3&reg=100&val=29))
- Models AV8185DN or AV8365DN retrieved by http://<cameraip>/get?model has a "DN" suffix after the digital model value, i.e. 8185DN or 8365DN, while single lens DN cameras return only digital model value without "DN" suffix, for example, AV3105DN camera returns 3105, not 3105DN. User can get the model type with "DN" suffix by http://<cameraip>/get?model=fullname (Confirmed by Arecont supporter). Anyway, what is displayed on NVR should be a full model type, which means DN camera should have "DN" information in camera model type.
- For H.264 stream, using default bitrate=8192 Kbits and qp=24.

Supported Resolutions

Model	Maximum Resolution	Resolution Options on NVR
AV1115	1280 x 1024	1280 x 1024 & 640 x 512
AV1125	1280 x 1024	1280 x 1024 & 640 x 512
AV1300	1280 x 1024	1280 x 1024 & 640 x 512
AV1305	1280 x 1024	1280 x 1024 & 640 x 512

AV1310	1280 x 1024	1280 x 1024 & 640 x 512
AV1315	1280 x 1024	1280 x 1024 & 640 x 512
AV1325	1280x1024	1280 x 1024 & 640 x 512
AV1355	1280 x 1024	1280 x 1024 & 640 x 512
AV2100	1600 x 1200	1600 x 1200 & 800 x 600
AV2105	1600 x 1200	1600 x 1200 & 800 x 600
AV2110	1600 x 1200	1600 x 1200 & 800 x 600
AV2115	1920 x 1080	1920 x 1080 & 960 x 540
AV2125	1920 x 1080	1920 x 1080 & 960 x 540
AV2155	1600 x 1200	1600 x 1200 & 800 x 600
AV2805	1920 x 1080	1920 x 1080 & 960 x 540
AV2815	1920 x 1080	1920 x 1080 & 960 x 540
AV2825	1920x1080	1920 x 1080 & 960 x 540
AV3100	2048 x 1536	1024 x 768
AV3105	2048 x 1536	2048 x 1536 & 1024 x 768 (1024 x 768 only for MJPEG)
AV3110	2048 x 1536	1024 x 768
AV3115	2048 x 1536	2048 x 1536 & 1024 x 768 (1024 x 768 only for MJPEG)
AV3125	2048 x 1536	2048 x 1536 & 1024 x 768 (1024 x 768 only for MJPEG)
AV3155	2048 x 1536	2048 x 1536 & 1024 x 768 (1024 x 768 only for MJPEG)
AV5100	2560x1920	1280 x 960
AV5105	2560 x 1920	2560 x 1920 & 1280 x 960 (1280 x 960 only for MJPEG)
AV5110	2560 x 1920	1280 x 960
AV5115	2560 x 1920	2560 x 1920 & 1280 x 960 (1280 x 960 only for MJPEG)
AV5125	2560 x 1920	2560 x 1920 & 1280 x 960 (1280 x 960 only for MJPEG)
AV5155	2560 x 1920	2560 x 1920 & 1280 x 960 (1280 x 960 only for MJPEG

Axis Communications

Supported Key Functions

- Video Streaming – Single and Dual
    - Video Codec – MJPEG, MPEG4 and H.264
- Audio Streaming
    - Audio codec supported depends on camera functionality
- Dry contact events

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username: root
- Password: pass

Note

These are associated with password group 0 (default)

Supported Camera API and Models

- Camera API: VAPIX 2 and VAPIX 3. The NVR will interface with any AXIS Cameras that support VAPIX 2 or VAPIX 3. The feature and performance of the cameras might vary due to VAPIX 2 or VAPIX 3 or camera limitations
- Model: Models that support VAPIX2 and VAPIX 3 Camera API. If the camera model is not on the list, then select AXIS-generic

Camera Serial Number

NVR will use the camera's MAC address as the camera serial number.

Supported Key Functions

- Video Streaming – Single and Dual
- Audio Streaming – Audio codec supported depends on the camera.
- PTZ – Applies to cameras that have mechanical Pan and Tilt and Optical Zoom.
- Dry Contact Events
- Query Device
- Reboot Device

Video/Audio Stream Feature

- For VAPIX 3 cameras, all MJPEG, MPEG-4 and H.264 streams can have different frame rates, resolution and quality.
- Cropped resolutions are not supported and do not appear in the resolution selection list.

Limitations

- Due to limitation in the Axis Encoder PTZ support, AD Ultra 8 analog PTZ presets are not supported on Axis Encoders.
- When working with Axis encoders the number of Presets is supported at:
    - 32 for Pelco analog cameras. It is known from Axis that this is a Pelco driver limitation
    - 20 presets on M7001 encoder (Axis Encoder limitation)
    - 50 for Bosch analog cameras
- Preset capabilities for the UltraDome 8 analog cameras do not function properly with the Axis encoders. This issue is not limited to the Victor Client; it occurs when trying to add/select/delete presets through the Axis web interface itself as well. This is an Axis encoder issue. As AD Ultra 8 analog cameras do not support presets, they can be added on NVR GUI and victor client, but do not function when executed.
- For Pelco analog cameras added to M7001 will produce shaky video and video loss .
- For cameras that claim to support absolute and auto focus but fail to provide minFocus and maxFocus (the focus range), the NVR web page (Image Settings -> Lens/Sensor) will display the Auto-Focus option but will not display the focus range when Auto-Focus is disabled. The AXIS 215 is an example of such a camera.
- The victor client activity window shows an unexpected extra offline entry and online entry for the AXIS 207W camera after it has been disconnected and then reconnected. This second offline/online entry is due to an apparent flaw in the AXIS 207W camera

- Q1755 without PT head installed will still show up as a PTZ camera in NVR. However, none of the PTZ functions will work. This limitation could apply to all cameras that has built-in PT/PTZ head support.
- Older versions of the AXIS handler may have set the “exposure”, “input gain”, “wdr” and other parameters on some AXIS cameras to invalid values.
- The camera’s web interface can be used to determine whether the camera parameters have been set to invalid values. Click “Setup->System Options->Advanced->Plain Config” and then select the appropriate parameter group (image source, PTZ, etc). The invalid values will be displayed but will be appended with “(not supported?)”. The AXIS handler will also see the “(not supported?)” in the parameter value strings it reads from the camera. If any invalid values are found then use the camera’s web interface to change invalid settings to valid settings.
- An attempt to add a preset to AXIS encoders (with AD Ultra 8 analog PTZ camera) will result in a “Error: query not implemented” HTTP error being returned in response to a “http://<ipaddress>/AXIS-cgi/com/ptz.cgi?query=position&camera=1” HTTP request. The reason for this is that the Sensormatic driver for the AD Ultra 8 camera does not allow the position to be queried. The parameter list retrieved from the encoder will report that absolute pan, tilt, zoom is not supported
- An attempt to add a PTZ preset for AXIS Q1755 fails because the getPositionSync method returns “Not supported” error as a result of the AXIS Q1755 not returning pan and tilt position info when PTZ position is queried. The zoom position is returned but not the pan and tilt position. Since the Q1755 cannot pan and tilt without the motor accessory then perhaps the need to set presets for zoom only is not critical.
- When an AXIS 240Q or 241Q four-port encoder is added to the NVR, camera slots will be created for all four ports regardless of whether the encoder inputs are receiving analog signals. If an analog signal is not preset, black video will be received by the NVR and recorded / streamed to viewing clients. To conserve NVR disk space and reduce network traffic, the camera slots associated with the unused inputs can be deleted from the NVR but they cannot be added again unless the entire encoder is deleted and re-added.
- The latest firmware (4.47) in the AXIS 210A camera and some other VAPIX 2 camera and encoder models have a flaw that limits the FPS of MJPEG streams to the FPS of an existing MPEG-4 stream until the MPEG-4 stream is destroyed. For example, if the configured FPS of two MJPEG streams are 20 FPS and 5 FPS and the FPS of the MPEG-4 stream is 15 FPS then the actual FPS of the MJPEG streams will be 15 FPS and 5 FPS until the MPEG-4 stream is destroyed. Similarly, if the MPEG-4 stream is 1 FPS then the actual FPS of the two MJPEG streams will be 1 FPS. A workaround is to ensure that the FPS of an existing MPEG-4 stream is greater that the configured FPS of the MJPEG streams. Another workaround is to revert the AXIS firmware to an older version (4.40 for example) which does not exhibit this symptom.
- After an AXIS camera has been disconnected from the network, it can take up to 22 seconds to raise an alarm and attempt a reconnect after the dry contact connection to the device is lost. However, the loss of the video stream from that camera will be detected within a few seconds and an alarm will be raised.
- If the camera’s own web GUI is used to rotate an image (instead of using the NVR web client “Image Settings” screen) then the change does not take effect on existing streams until an FPS or resolution change causes the stream to be destroyed and recreated. It is better to use the NVR web client “Image Settings” screen to rotate the image because that will cause the stream to be destroyed and recreated.
- When using /AXIS-cgi/com/ptz.cgi?camera=1&areazoom=<int>,<int>,<int less than 100> AXIS API to zoom out on AXIS 214 PTZ camera, the zoom position will reverse to maximum zoom in when the request causes a zoom out to go beyond the widest zoom out position. This, according to AXIS technical support, is a bug within the AXIS 214 PTZ camera (v4.40). The above mentioned API is used by NVR Web client and VE API to perform PTZ Nudge operation.
- An AXIS VAPIX 2 camera will momentarily disrupt an MPEG-4 video stream as a result of changing the audio codec which causes the NVR to stop/recreate the video stream. During

recorded playback by Victor Client, a blank image appears for a very short period at the point in time where the audio codec was changed.

- If the customer needs to change the active state of a dry contact input then it should be changed before adding a corresponding alarm sensor otherwise an alarm/alert may be caused as a result of changing the active state.
- For H.264 video streams, the NVR web client does not allow the H.264 video quality and H.264 video bit rate setting to be examined or changed. Be advised that the AXIS handler never changes the camera's H.264 quality, Variable/Constant bit rate mode or H.264 video bit rate settings. If the customer uses the camera's own web interface to change the "variable bit rate", "constant bit rate" or "video bit rate" setting then that change will not take effect on active streams. It will be necessary to cause the NVR to tear down and recreate the video stream. That can be achieved by using the NVR web client to change the FPS setting of the stream.
- The AXIS 221 and AXIS 223 cameras are falsely recognized as PTZ cameras due to the "Properties.PTZ.PTZ=yes" parameter read from the cameras. As a consequence, Victor Client will show the PTZ icon and the NVR web client will show the PTZ link when using the AXIS 221 or AXIS 223M camera.
- The AXIS API does not provide same the functionally across different cameras. When lens WDR property set to "1", the AXIS camera's wide dynamic range settings will be set to "on" for some cameras and for others for WDR"3". Setting to "0" will turn all to "off"
- Audio volume increment can be set in increment s of "3". Current implementation does not incorporate the "mute", "auto" or a non integer value
- The zoom speed on AXIS 233D is fixed
- AXIS Q7406 does not support PTZ positioning query. Hence NVR will not be able to obtain auto-focus and auto-Iris status
- Due to AXIS cameras limitations the NVR is not able to use the same HTTP connection for multiple PTZ functions, which might result in higher PTZ latency
- A change was made to the AXIS handler to designate AXIS camera by VAPIX version
- AD Ultra 8 analog PTZ are not supported on Q7406, 241Q and 243Q
- AXIS 212 can't pan or tilt if the camera is in full zoom out mode
- AXIS 212 can't zoom out stop near full zoom distance and cannot set to full out
- AXIS 214 when to full zoom out position will suddenly zoom in for "some-amount" of distance
- AXIS 221 and 223 are falsely recognized as PTZ cameras
- The NVR web client provides no control for changing the "capture mode" of an Axis P1346 camera and other megapixel cameras. Therefore it may be necessary to use the camera's own web GUI to set the desired capture mode to enable the use of associated video resolutions. After changing the capture mode, it will be necessary to refresh the NVR web client camera details page to select from the currently available resolutions.
- If an Axis P5522 PTZ camera is not receiving sufficient power for its PTZ operations then it will disable the PTZ motor and remove the PTZ.Limits and PTZ.Support parameter groups from the camera parameter list. As a consequence, no PTZ controls will be available in the NVR web client and Victor Client for that camera. The symptom may also occur when other PTZ camera models receive insufficient power.
- The default palette setting of an Axis Q1910 or Q1921 thermal camera can only be changed by using the camera's web interface "Setup -> Video & Audio -> VideoStream -> Image Appearance.Palette". Changing the default palette has no effect on established streams. The NVR uses whatever the default palette is when the stream is established. After the customer changes the default palette then it is necessary to destroy and recreate the stream received by the NVR. The stream can be destroyed and recreated by simply using the NVR web client to change the video frame rate.

- The Sequence portion of the NVR web client PTZ page may appear or disappear when the page is refreshed.
- If the MJPEG quality level is set to 100 at high resolutions (1920x1200 for example) then live viewing problems (high latency, momentary loss of video, etc) may be observed in a Victor Client surveillance screen if that workstation is also trying to live view using the NVR web client. To avoid the problem, either reduce the quality level or reduce the number of live viewing clients that are running on the workstation. Also the FPS provided by the camera may drop dramatically as a result of increasing the quality level to 95 or higher.
- The Axis M5013 and M5014 have a single speed PTZ movement therefore the camera PTZ movement is affected only by the interval between the start and stop commands from Victor Client, not the speed values in the start command. The consequence is that PTZ movements may be larger than desired. Refer to QC 9770 for more details.
- The Axis M3204 and other models that have the exposure setting at “automatic” (default) will reduce FPS to improve image quality when poor lighting conditions occur. To avoid the FPS reduction when the lights are turned off in the room being viewed then change the exposure setting from “automatic” to “hold current” however the consequence is that the image quality could be very poor (dark).
- A frame rate drop or a brief video loss may occur at the moment that lights are turned off in a room being viewed when receiving MJPEG from Axis Day/Night cameras. To avoid the problem, either use MPEG-4 or H.264 to receive the stream. .
- The NVR Web client allows selection of 8 Kbps audio bit rate and AAC Audio Codec but not the audio sampling rate. Selecting the 8 Kbps audio bit rate setting will result in a loss of audio if the sampling rate is 16 KHz or higher. Use the camera's own web interface to change the audio sample rate to 8 KHz if the 8 Kbps audio bit rate is selected. This limitation occurs on Axis cameras that support AAC Audio Codec and the 16KHz (or higher) Audio Sample Rate. Please refer to Axis camera documentation for details.
- After going to a PTZ preset position on an Axis P5512 camera, the NVR web client will report an error although the camera actually goes to the preset position.
- After enabling dry contact inputs, ensure that LAN connectivity to the camera is maintained otherwise frequent NVR event log messages will be generated about failed attempts to re-establish dry contact event streams and an infrequent reload of the Axis handler may occur due to a race condition flaw in libcurl version 7.21.3.
- The number of presets allowed is capped at 50 for the victor Client. When working with encoders, only the first 32 presets function properly. Axis documentation claims each channel can support 100; however this does not appear to be the case.

Note

Please refer to AXIS cameras release notes published on the AXIS website for more information about AXIS cameras and limitations.

Supported Key Functions

- Video Stream
- Query Device
- Audio Stream
- Events
- PTZ

Video Stream

Supports MJPEG and H264 streams

NVR supports dual H264, or one H264 and one MJPEG

Audio Stream

Supports audio codec G.711

Audio stream is mixed with video stream

Dry Contact Event

Supports polling mode at a 250ms interval

Unsupported Key Functions

- Reboot
- Power Off
- Get Log
- Factory Defaults
- Find Device

Default Ports

- Port 80 for HTTP
- Port 554 for RTSP

Default Username & Password

Service user and default password is blank.

Supported Resolutions

Model	Max Resolution (Default Value)	Resolution List in NVR 4.2+
AutoDome JR800 HD	1280x720	1280x720, 4CIF, CIF
Dinion NBN-498-P IVA	4CIF	4CIF, CIF
Dinion HD 1080p D/N IVA	1920x1080	1920x1080, 1280x720, 4CIF, 704x432, 512x288, CIF, 256x144
Dinion NBN-921-P IVA	1280x720	1280x720, 4CIF, CIF
NBC-265-P	1280x720	1280x720, 4CIF, CIF
AutoDome 800 HD	1280x720	1280x720, 4CIF, CIF

Limitations

- Due to a camera limitation, the handler can only support one MJPEG stream. If a second MJPEG stream is enabled, the NVR will produce an error message.
- Bosch camera supports two H264 streams. Handler default stream is H264 stream1. Due to camera limitations, H264 stream 2 resolution depends on H264 stream1 resolution.

Note

H264 stream 1 and stream 2 refer to H264 streams from the camera corresponding with the camera encoder profile1 and profile 2, not streams 1 and 2 on the NVR.

Resolution List on H264 Stream 1	Current Value of H264 Stream 1	Resolution List on H264 Stream 2	Resolution List on MJPEG Stream
1920x1080 1280x720 4CIF 704x432 512x288 CIF 256x144	1920x1080	1920x1080 1280x720 4CIF 704x432 512x288 CIF 256x144	1920x1080 1280x720 4CIF 704x432 512x288 CIF 256x144
1920x1080 1280x720 4CIF 704x432 512x288 CIF 256x144	1280x720	1280x720 4CIF 704x432 512x288 CIF 256x144	1280x720 4CIF 704x432 512x288 CIF 256x144
1920x1080 1280x720 4CIF 704x432 512x288 CIF 256x144	4CIF or below	4CIF 704x432 512x288 CIF 256x144	4CIF 704x432 512x288 CIF 256x144

From the table above, the resolution on both H264 stream 2 and MJPEG stream must be equal or les than H264 stream 1. This means, when changing H264 stream 1 resolution to a smaller one, ensure it is equal to or less than the resolution on both H264 stream 2 and MJPEG stream.

- Due to a camera limitation, if the user starts MJPEG stream or H264 stream2 with HD resolution, please make sure H264 stream 1 resolution is equal to or higher than the resolution on MJPEG stream or H264 stream 2.
- Bosch has implemented the CGI to get the Camera Type instead of the Model name labeled on the camera. So the Camera Type is shown in the model list on the NVR.
- Bosch cameras do not support changing the Video Standard, only viewing the Standard. Bosch cameras have 3 Video Standards: NTSC, PAL and HD. If the camera video standard is HD, “UNKNOWN” will be displayed on the NVR Camera Image Settings page.

- When setting up Dry Contacts on NBN-921-P IVA serials and NBN-498 serials, it is necessary to activate the Alarm Inputs on the camera GUI first. Users must change the Active dropdown list value from 'None' to 'N.O.' or 'N.C.' on the camera, as 'None' means disabled and this does not automatically change when Dry Contacts are activated on the NVR.
- Due to a camera limitation, for Bosch Dinion HD 1080P D/N IVA, if the users sets stream 1 codec H264 and 30 FPS, stream 2 codec H264 then the streams can only reach 10 FPS, due to stream 2 being dependent on stream 1.
- Handler supports Generic functions including dual stream and audio stream with the following limitations:
    - Cameras need to provide three streams, including two H264 streams and one MJPEG stream. So the handler can support dual H264 streams or one H264 stream and one MJPEG stream.
    - Resolution list includes HD resolution (1080P and 720P) and SD resolution (CIF and 4CIF), but cameras may only support one or several of them.
    - Audio codec G711 can be supported by the audio stream, other codecs are not supported.
- It is found that different camera firmware versions can return different camera types. This causes the handler to recognize the camera as Generic camera. Please ensure the Bosch camera has the recommended firmware version before adding it to the NVR.
- Due to camera limitations on the AutoDome Jr 800 HD, it supports single H264 stream when the resolution is set to 1080P or 720P 50 (PAL)/60 (NTSC) FPS on H264 stream 1, and H264 stream 2 is only a copy of H264 stream 1 when 1080P is selected for stream 1. It supports dual H264 streams when resolution and FPS are set to 720P and 25 (PAL)/30 (NTSC) FPS or below, and H264 stream 2 can be set to 4CIF and CIF resolution.
- Due to camera limitation, when setting 1080P for MJPEG stream on the Autodome Jr 800HD, it is shows 1920x1072.

Known Issues

- The FPS is only 2.75 when MJPEG streaming (25 fps) is in use. It is a known camera limitation. Confirmed with Bosch support that for most of the Bosch cameras FPS can only reach up to 5 FPS.
- Audio and video is not synchronized with MJPEG stream on victor client. This is due to the MJPEG stream limitation on the FPS only reaching a low rate.
- When setting Brightness and Contrast on the NBC-265-P, it returns an error message. This is because it uses different CGI from other cameras, so these properties and functions are not supported.
- Frequent Video Loss for Bosch Dinion HD 1080p D/N IVA is caused by the default NVR storage setting. The recommended mount option when setting up the NVR is: *nofail,noatime,nodiratime,attr2,nobarrier,noquota,allocsize=4M*
- Bosch Dinion 1080P frequent video loss during dual stream soaks.Bosch NBN-498-P IVA frequent video loss.Pause then Play causes Victor to freeze and sometimes crash.
  These three defects are due to setting the GOP structure to "IBP" on the camera GUI. It should be set to "IP".
- When the network connection drops from the NVR to the cameras, then after a while, reconnected, the device may not work as well. After restarting the camera, it will work as normal.
- Due to an NVR web client known Issue, when Stream 2 is enabled with the same codec as Stream 1, the setting is a copy of the Stream 1 settings. But Bosch dual H264 stream support has a different resolution list. So when the client applies, it shows and applies a different

resolution value on Stream 2.

- Due to the NVR web client known issue, when setting the resolution for the second H264 stream, set it on the advance edit page. This is due to the fact it is a copy setting of H264 stream 1 on camera list page with editing status, and real available resolution may not be included in the copy of the resolution list.
- Due to camera known issue, for Dinion HD 1080P D/N IVA camera, set resolution 4CIF (704x480) on H264 Stream 1 and 768x432 on H264 Stream 2, then the user only can get an actual resolution 704x432 for H264 Stream 1. And set resolution 768x432 on H264 Stream 1 and 4CIF (704x480) on H264 Stream 2, user can only get actual resolution of 704x432 for H264 Stream 1.
- Green line at top of victor Unified Client live stream on Bosch AutoDome Jr 800HD. This is a camera issue, we can find a green line on top of player when play H264 stream from Bosch AutoDome Jr 800 HD by VLC directly.

Special Points

- Bosch camera has 8 profile configurations on the web page, and each profile may configure a set of codec parameters. Handler specifies H264 Stream 1 on camera to profile Configure 1 and H264 Stream 2 on camera to profile Configure 2 and the MJPEG stream on camera to profile Configure 3, so when the NVR sets stream codec parameters, the parameter is written in the special profile configured.
- Changes to codec parameters should only be made on the NVR web GUI and not the camera web page as they may not be implemented.
- The ranges of Brightness and Contrast are 0-255 in Bosch cameras. The Handler converts this value to 0-100 using the following formulae:

  Camera to NVR: *Camera(brightness/contrast)*100/255*
  NVR to camera: *NVR(brightness/contrast)*255/100*
- When adding the camera to the NVR, the GOP structure must be set to "IP" in profile configure of the camera web page, so the FPS value is usable.
- The default GOP is 15, when the stream restarts, the default value will be set. If the user would like to set the GOP value only after the stream on the NVR restarts.
- When enabling audio stream on NVR for all Bosch cameras, ensure audio is enabled on camera web GUI.

CBC

Supported Key Functions

- Video Streaming – Single and Dual
- MJPEG and H.264 video codecs
- Query Device

Unsupported Key Functions

- PTZ Operation
- Audio Streaming
- Dry Contact Events
- Power off devices
- Get device log
- Find Devices
- Reboot
- Reset to factory default

Camera Serial Number

NVR will use the cameras MAC address as the camera serial number.

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username: admin
- Password: <The password should be left blank>

Supported Resolution

Model	Max Resolution	Resolution Options on NVR
MP1A	1280x1024	1280x1024 / 640x512
MP1DN	1280x1024	1280x1024 / 640x512
MP2A	1600x1200	1600x1200 / 800x600
MP2DN	1600x1200	1600x1200 / 800x600
MP3DN	2048x1536	2048x1536 / 1024x768 (For MJPEG – only 1024x768)
MP5A	2560x1920	2560x1920 / 1280x960
MP5DN	2560x1920	2560x1920 / 1280x960 (For MJPEG – only 1280x960)
MP8D-L4	1600x1200	1600x1200 / 800x600

Limitations

Note

Refer to Limitations stated for Arecont Vision as they also apply for CBC products.

- Due to NVR 4.1 motion detection only handling resolution up to 1280x960 for AV1XXX, AV8XXX, AV2100, AV2105 and AV2110, motion detection can only handle resolution as half.
- Due to camera limitation, for CBC cameras all MJPEG only cameras (Arecont: AVxx00, AV8180, AV8360 – CBC: MP1A, MP2A, MP5A and MP8D-L4) will stream at a higher FPS (reaching max FPS) when setting to 15FPS. FPS of 14 and lower are not affected by this issue.
- When upgrading to latest camera handler pack, note that the parameters of video streams may be changed to the default values. It is recommended to recheck video codec parameters when upgrading or restoring configuration backups.

Known Issues

Note

Refer to Known Issues stated for Arecont Vision as they also apply for CBC products.

- Live view and playback streaming (instant playback) on the NVR does not "pace" delivery of large amounts of data well, causing overflows in network buffers at the VEclient. This issue is more noticeable when using higher bitrate cameras and will cause skipping in live video and playback on the VEclient. For video retrieval on higher bitrate cameras it is advisable to search and retrieve the clip, this will display the recorded video without this issue.
- NVR receiving H.264 with timestamp prior to last one received. This is a firmware issue. Beta firmware has been received from Arecont and resolved the issue, awaiting formal release (Arecont Ticket: TECHSUP: 15516).

Considerations

CBC model cameras with firmware version 62414 will be configured as their Arecont equivalent, also taking the Arecont model. In firmware 64238 CBC model cameras will be identified as a CBC model, but for codec parameters. CBC model cameras still correspond with Arecont model cameras.

Supported Key Functions

- Video Streaming – Single and Dual
- PTZ – Applies to cameras that have mechanical Pan and Tilt and Optical Zoom.
- Query Device
- Reboot Device

Unsupported Key Functions

- Find devices
- Power-off device
- Get device log
- Reset to factory default
- Digital PTZ – Applies to cameras that support digital PTZ.
- Audio Streaming

Camera Serial Number

NVR will get the serial number from each camera.

Required Ports

- Port 8080 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username:admin
- Password:indigo

Firmware Requirements

Nexus Server **F, D & PT-Series'**	Nexus server must be updated to v2.5.9.17 or later. **Note:** v2.5.9.17 is in beta
F, D & PT-Series'	FLIR Camera Firmware must be v2.5.9.15 or later.

Video Stream Feature

Specific video stream feature characteristics are:

PT-Series, F-Series & D-Series: MJPEG, MPEG4 and H.264. Support dual video streams.

Limitations

	Model	Known Camera Limitations
1	F-Series D-Series PT-Series	Due to a necessity of FLIR camera video hardware re-start, it may take about 48 seconds for the video stream to come back after any stream property changes.
2	F-Series D-Series PT-Series	Camera may take more than 5s to respond to a CGI command, this may cause NVR to timeout. This is camera performance issue.
3	F-Series D-Series PT-Series	User can only view camera's video standard format setting (NTSC or PAL) on NVR. We do not recommend the Video Standard be changed from the default. This is due to the requiring FLIR camera hardware change. The effect of changing the Video Standard are: Incorrect Image Resolution and FPS will be displayed on Camera WebGUI, NVR and victor Client.
4	F-Series D-Series PT-Series	NVR requires a response from cameras within 5 seconds. As a result, changing resolution on the NVR may result an error message. If the change is made again on the NVR it will work. The error message is not always received.
5	F-Series D-Series PT-Series	MJPEG Live video Pixilated is caused by a low Q set by default on the camera (Q=25). Once this value is set to 75 the Pixilation disappears. The problem only arises with MJPEG.
6	F-Series D-Series PT-Series	After changing video channel resolution, frame rate and/or video codec type on a stream, video stream will become unavailable for about 45 seconds. This is because changing video channel configuration parameters (Bitrate, Frame rate, Resolution and Video Codec Type) requires reset of camera's video hardware.
7	F-Series D-Series PT-Series	User is able to add camera to NVR using wrong password from password group. This is because FLIR camera doesn't require authentication.
8	F-Series D-Series PT-Series	Video freeze may occur when changing heat distributions or many moving objects are detected by camera. Wireshark traces shown that the camera under test stops transmitting UDP/RTP packets for a short period of time.
9	D-Series PT-Series	Camera zoom in and zoom out only work on NVR. Camera zoom in and zoom out do not work on Victor Client. This is because Victor Client uses "Continuous Zoom" method to implement zoom in and zoom out and FLIR cameras have no CGI support for continuous zoom.
10	D-Series PT-Series	Preset cannot be used to set Zoom In and Zoom Out. PTScanListPointCurrentValuesSet is used to save a preset position. This CGI does not save the zoom setting into the preset position.
11	D-Series PT-Series F-Series	The video source format of FLIR cameras is pre-configured at the factory. Switching the video source format through FLIR web or Nexus interface will not take effect until the required FLIR camera hardware components are installed. Customers must contact FLIR to obtain the required hardware components and follow their installation procedure.

Known Issues

Model	Known Issues
F-Series	Due to VE-API limitation, ZOOM only camera will not be supported as PTZ camera. Therefore, ZOOM feature of F-Series will not be supported.
F-Series D-Series PT-Series	Communication channel between NVR client and camera server through port 8080 becomes unavailable occasionally. If HTTP connections through port 8080 cannot be established, FLIR camera sever will not be able to respond to CGI commands sent by NVR client. When this happens, user must try to re-establish the HTTP connection through port 8080. Table 1 lists steps for trouble shooting HTTP connection between NVR client and FLIR camera server (Nexus Server).

D-Series	D-Series camera returns incorrect firmware version number in the IRDeviceVersionGet CGI response. Camera firmware version number is only available on the main page of the camera's web configuration tool. The camera firmware version number displayed on NVR is incorrect.
F-Series	Video image streamed from a F-Series camera always has a big border when being displayed on NVR and Victor Client.
F-Series D-Series PT-Series	Video image of moving objects looks interlaced on Quick Time and Java Applet Web Browser. The interlacing may only have minimal effect on the Victor Client with no noticeable effect to the Victor Client image. The interlacing will noticeably affect the Image displayed on the NVR Live View and Java Applet on the Alarms page.

Setup

Step	Setting up a new camera
1	Models: PT-Series/D-Series/F-Series Reset the camera to manufacturing default Open Camera Web Browser Select Configuration File Go to Factory Backup & Recovery Window Select Restore to restore camera to "factory defaults"
2	Models: PT-Series/D-Series/F-Series Adding CGI Interface The FLIR camera's CGI Interface must be enabled through Camera Web Configuration Tool. This step must be performed before setting up a FLIR camera's IP address on NVR. Steps for enabling the "Nexus CGI Interface" Open Camera Web Browser: Select "communications" Select "Network Remote /VMS" On Interface Configuration Page Select "Nexus CGI Interface". Select "Add" Click Create. Click Save. Stop Server Start Server. Note on port number for Nexus Interface: Port 8080 is the designated port for communication between NVR and FLIR camera server (Nexus Server). Port is automatically set to "8080" by default

3	Models: PT-Series/D-Series/F-Series Steps for enabling the Second stream on the PT-Series/D-Series Before setting a FLIR camera's IP address on NVR, the user must enable the second stream for each camera LEN on the PT-Series/D-Series/F-Series. Steps for enabling the second stream on each camera for PT-Series/D-Series: Open Camera Web Browser On FLIR Systems Nexus Configuration Page: Select "Modules" Select "Video" On VIDEO Configuration Page Select Device ID #1 , Select Enabled=yes Select "Save" Select Device ID #3, Select Enabled=yes Select "Save" Stop Nexus Server Start Nexus Server Steps for enabling the second stream for F-Series: Open Camera Web Browser On FLIR Systems Nexus Configuration Page: Select "Modules" Select "Video" On VIDEO Configuration Page Select Device ID #1 , Select Enabled=yes Select "Save" Stop Nexus Server Start Nexus Server
4	This steps are required only if incorrect camera model name is displayed on NVR. Use the following steps to change the model: Go to " ip>/.serial". Change model name (i.e. F-324) This field is shown as the "Name:" in the IRDeviceVersionGet CGI response.

5	The following describes the steps for installing a dictionary file to a FLIR camera. **Note**: In order for a FLIR camera to properly respond to all the CGIs, the camera must be installed with the correct dictionary file version specified in this release note. **1** Open Internet Explorer. Go to http://<camera ip> **2** Select "Server Status" **3** In the "Nexus dictionary file" Window **a** Select "Browse" **b** Enter the path of the folder which contains the correct Nexus dictionary file to be uploaded. **c** Select "Upload" **4** Use the following two steps to re-start Nexus Server **a** 4.Select "Stop" **b** 5.Select "Start"
6	The following describes the steps for Installing a Nexus Server file to a FLIR camera. **Note**: In order for the camera to properly respond to all the CGIs, all FLIR camera must installed with the correct Nexus Server file specified in this release notes. **1** Open Internet Explorer. Go to http://<camera ip> **2** Select "Server Status" **3** Select “Stop” **4** In the "Nexus Server Upload and Download" Window: **a** Select "Browse" **b** Enter the path of the folder which contains the correct Nexus Server file to be uploaded. **c** Select "Upload" **d** Wait until the upload is completed. It usually takes at least 7 minutes for the upload to be completed. **5** Use the following two steps to re-start Nexus Server **a** Select "Start"

Troubleshooting

Error Message on NVR	Possible root causes	Trouble shooting steps
NVR Failed to add camera. No values returned. The specified device is not recognized. Verify IP address and camera type”	-NVR Lost communication with Camera - Camera is offline - Camera server is not running	Ping camera IP to make sure camera is connected network. Open a web browser. Issue “ServerWhoAmI” CGI command, “ SERVERWhoAmI” If camera responds the above CGI with no error, this means communication between NVR and Camera communication through port 8080 has been established. ServerWhoAmI CGI command response format is as follow: Camera’s response: { "SERVERWhoAmI": { "Return Code" : 0, "Return String" : "No Error", "Id" : <session ID> "Owner" : <owner ID>, "ip" : "<NVR Client IP>" } } If camera fails to respond to the “SERVERWhoAmI” CGI command, Open FLIR camera web configurator. Select “communication” Select “Remote Network / VMS” On Interface Configuration page Verify if Nexus CGI Interface has been added. Verify if port 8080 is used for the Nexus CGI Interface. Make sure Nexus CGI Interface is the only interface using Port 8080. Click Create button, Click Save. Use the following steps to restart camera server (Nexus Server) -Select “Stop” to stop Nexus Server -Select “Start” to restart Nexus Server

Known Issues related to Camera failed to respond to a “SERVERWhoAmI” CGI	Possible causes	Recommended Workaround
NVR returned “Device Error” when trying to change image resolution setting.	Camera failed to respond to a CGI on a timely manner. NVR Time out occurred.	Re-try the command
Change video channel configuration parameters (for example: Resolution) on NVR results an error.	Camera denied remote control request.	If problem persisted, follow the follow steps to re-gain remote control of the camera. Reset camera to manufacturing settings. Re-add CGI Interface. For PT-Series/D-Series, Re-enable second streams (ch1 and ch3) on each camera. For F-Series, re-enable second stream (video ch1) on camera.

Panasonic

Supported Key Functions

- Video Streaming – Single and Dual
    - Video Codec – MJPEG, MPEG4 and H.264
- Audio Streaming
    - Audio codec supported depends on camera functionality
- Dry contact events

Required Network Ports

- Port 80 is for HTTP
- Port 554 is for RTSP

Default Username & Password

- Username: admin
- Password: 12345

Supported Camera API & Models

Model	Minimum Camera Firmware Version
NW484	1.61E0
NW502S, NP502	1.10
NW960, NW964, NS950, NS954	1.61E0
SF332, SF335, SF336	1.03
SF342, SF346	1.34
SW352	1.06
SW355	1.04
NP244, NF284	1.60
NS202, NS202A	2.70
SC384	1.05
SC385, SW395	1.01
SP102	1.01
SP105	1.01
SP302, SP305, SP306	1.04
NP304, NF302	1.61E0
NP244	1.80E4
Generic Fixed – for all unlisted Panasonic IP Fixed Cameras, not PTZ	N/A

Camera Serial Number

NVR will use the camera's MAC address as the camera serial number.

Supported Key Functions

- Audio Streaming – Audio codec supported depending on the camera.
- Video Streaming – Single and Dual (R)
- PTZ – Applies to cameras that have mechanical Pan and Tilt and Optical Zoom.
- Dry Contact Events
- Query Device
- Reboot Device

Audio/Video Stream Feature

- Common characteristics
- Changing the settings of the current codec will reboot the codec and will affect all the video streams
- Video quality settings for MJPEG ranges from 0 – 9, while for MPEG4, camera has low, normal and fine. Normalized values in the NVR for the same is 0 – 100, this makes the increment step for MJPEG being 10 and that of MPEG4 being 50
- Video quality and bit rate control settings for H.264 must be done via the camera web page

The specific Audio Video stream feature characteristics by model families are:

Model	Audio/Video Stream Feature
NW484, NW960, NW964, NS950, NS954, NP304, NF302, NS202, NS202A, NP244, NF284	MJPEG and MPEG4 Support only 1 video stream in order to achieve high frame rate
NW502S, NP502, SF332, SF335, SF336, SP302, SP305, SP306, SC384, SC385, SW395, (SF342, SF346 SW352, SW355)Generic Fixed	MJPEG, MPEG4 and H.264 Support 2 video streams simultaneously, but the camera might not reach the max fps for both streams
SP102, SP105	MJPEG and H.264 Support 2 video streams simultaneously, but the camera might not reach the max fps for both streams

Note

1 The creation/deletion of audio streams does not affect previously created video streams

2 Refer to the Panasonic handler encoder profile document for info about supported video and audio streams and default FPS, resolution and quality settings.

Event Stream Feature

HTTP Server push functionality available in Panasonic is used to efficiently obtain the dry contact event. The maximum number of dry contact events supported by each camera family:

Model	Max # of Dry Contact Supported
NW484, SF332, SF335, SF336, SP302, SP305, SP306, NP304, NF302, NS202, NS202A, NP244, NF284 (SF342, SF346 SW352, SW355)	1
NW502S, NP502, NW960, NW964, NS950, NS954, SC384, SC385, SW395, Generic Fixed	3
SP102, SP105	0

Limitations

- Relative focus and Iris are not supported
- Camera available digital PTZ is not supported
- Due to camera performance limitations with the M-JPEG/MPEG4 cameras, only one stream is supported to be able to get full frame rate performance from the camera
- To achieve the best available frame rate for MJPEG, the camera-direct web-interface must be used to ensure that the H.264(1) and H.264(2) streams are set for transmission off, and similar for cameras in MPEG-4 Video encoding format. For cameras which send audio over a low-bandwidth video stream, such as SW352, SW355, SC384, and SC385, this also requires the audio to be disabled. Even so, due to processing and bandwidth limitations, some camera models may not deliver the maximum listed frame rate when streaming MJPEG at the maximum resolution (especially at a high video-quality level).

- Due to camera performance limitations when using dual stream out of a M-JPEG/MPEG4/H.264 camera, the camera might not deliver the requested frame rate. Please refer to Panasonic product catalog for more details
- Fractional frame rate support is not supported with the VideoEdge NVR and will be reported as “unknown”
- NW502S and NP502 max frame rate for dual stream is 15FPS at VGA and 10FPS at QVGA
- SF332, SF335, SF336, SP102, SP105, SP302, SP304, SP305 and SP306 are 1.3 megapixel and the resolution available on MPEG4 is a 4:3 aspect ratio
- SC385 and SW 395 audio codec is not supported due to limitations with the Panasonic API
- Generic camera handler provides video, audio and events only
- Using generic camera handler, MPEG4 or H.264 need to be set in the camera webpage
- The NVR web client image settings screen will allow the sharpness value to be examined and modified for some cameras. If the value is changed and saved then the new displayed value may differ slightly from the value that was saved. That slight difference is expected behavior. The difference is due to the conversion of a 0 to 100 value to a different range value that is actually stored / persisted on the camera. For example, the actual sharpness (or aperture) range on the camera could be 0 to 31 or 0 to 63.
- The camera models which can support either H.264 with MJPEG or support MPEG-4 with MJPEG must be switched between those modes using the camera direct web interface. If the Video encoding format is changed between H.264 and MPEG-4 while only MJPEG video is streaming, there will be a short interruption and recovery of that stream. However, if H.264 video is streaming when the camera direct web interface switches H.264 off and MPEG-4 on, the attempted recovery of H.264 video will not be successful. Similarly, an MPEG-4 video stream cannot be recovered if the Video encoding format is switched to H.264. To recover, re-enable the expected stream on the camera-direct web interface, or delete the camera from the NVR and re-add. Note that with certain models, including SC384, SC385, SW352, and SW355, an audio stream occurs as part of either an H.264 or MPEG-4 stream, and the audio stream will fail if the video-stream format is switched off. It is best to settle on a video encoding format before the camera is added to the NVR, or while the camera is streaming only MJPEG and before any audio stream is configured.
- When a video stream’s video codec, resolution, frame rate, or quality is changed, the video stream is restarted with the new value, and there is a short interruption of the video.
- A change in the audio bit-rate can take a long time for a response in the WV-SW355 (and perhaps other models) for unknown reasons. The bit-rate change request can be successful, but due to various timing constraints, there can be an error message “Failure to set Bitrate = XX for audio input”, for XX = 16 or 32, with further text “Device handler internal error” or “No VE Text response after waiting 5000 milliseconds”. If successful, a redisplay of the audio configuration page for the camera after 10 to 12 seconds will show the updated bit-rate value.
- Although the display list of model names includes the prefix “WV”, a Japanese model with a “DG” prefix, such as DG-SC385, will be recognized as the equivalent WV-SC385. However, a Japanese model which has no “WV” equivalent, such as the DG-SP304, will not be recognized and will be treated as Panasonic Generic.
- Some cameras have an Auto-Focus capability that can be enabled or disabled, such as the SC384, using the Image Settings Lens/Sensor properties web-page. Due to a camera API limitation, however, the Auto-Focus check box does not show the current auto-focus status and will always appear as unchecked.
- When Wide Dynamic Range is enabled (under Image Settings, Lens/Sensor properties), many of the camera models have a defined limitation that Back Light Compensation (under Image

Settings, Video Processing Amp) is not available. Some camera models, including SC384, will display Back Light Compensation as “Unknown” and other models will display “0”.

Note

Please refer to Panasonic cameras release notes published on the Panasonic website for more information about Panasonic cameras and limitations.

Known Issues

Model	Known Issues
NW484	By default, the MPEG-4 capability is turned off programmatically. This will effectively disabled the audio capability, since the Panasonic handler utilizes MPEG-4 stream for audio streaming. MJPEG frame rate can be reduced if customer manually enables the MPEG-4 capability directly through the camera’s web interface.MJPEG frame rate can be reduced if customer manually enables the MPEG-4 capability directly through the camera’s web interface.
NW502S, NP502	Max frame rate for dual streaming are 15fps for VGA and 10 fps for QVGA. For single video stream, when the resolution is 1.3 mega pixels, the maximum frame rate for H.264 is 30fps. When the resolution is 3 mega pixels, the maximum frame rate for H.264 is 15fps The mode settings of H.264 and MPEG-4 operation needs to be explicitly set at the camera Video standard has been wrongly represented in this case as video mode, which is either 3 megapixel or 1.3 megapixel mode, with 4:3 and 16:9 aspect ratio settings. Since mode is not supported by Encoder profile, we have used this as this has high impact on video streaming. (Shall wait for a decision if this is objected) Image white-balance supports 3 settings, namely “1” – Auto White balance control mode “2” – Auto tracking white balance mode “3” – Auto tracking white balance under a sodium lamp mode
NW960, NW964, NS950, NS954	By default, the MPEG-4 capability is turned off programmatically. This will effectively disabled the audio capability, since the Panasonic handler utilizes MPEG-4 stream for audio streaming MJPEG frame rate can be reduced if MPEG4 is manually enables directly through the camera’s web interface Video standard has been wrongly represented in this case as video mode, which is either 3 megapixel or 1.3 megapixel mode, with 4:3 and 16:9 aspect ratio settings. Since mode is not supported by Encoder profile, we have used this as this has high impact on video streaming. (Shall wait for a decision if this is objected) Supports 256 presets in the camera Supported pattern count is based on configuration in the camera which might vary as 1, 2 or 4. Image white-balance supports 3 settings, namely “1” – Auto White balance control mode “2” – Auto tracking white balance mode “3” – Auto tracking white balance under a sodium lamp mode
SF332, SF335, SF336 (SW352, SW355)	SF336 picture quality is 1.3 mega pixels; there are two aspect ratios 4:3 & 16:9. MPEG-4 is not available when 16:9 is selected When either H.264 or MPEG-4 transmission is set to On, the maximum frame rate for MJPEG is 5fps The mode settings of H.264 and MPEG-4 operation needs to be explicitly set at the camera Video standard has been wrongly represented in this case as video mode, which is 1.3 megapixel mode, with 4:3 and 16:9 aspect ratio settings. Image white-balance supports 3 settings, namely “1” – Auto White balance control mode “2” – Auto tracking white balance mode “3” – Auto tracking white balance under a sodium lamp mode

NP304, NF302	Picture quality is 1.3 mega pixels; there are two aspect ratios 4:3 & 16:9. MPEG-4 is not available when 16:9 is selected When MPEG-4 transmission is set to On, the maximum frame rate for MJPEG is 5fp The maximum MPEG4 resolution is 1280x960. The maximum MJPEG resolution is 640x480 When MPEG-4 transmission is set to On, the maximum frame rate for MJPEG is 5fp. By default the MPEG-4 capability is turned off programmatically which disables the audio capability. Therefore audio is not supported. MJPEG frame rate can be reduced if MPEG4 is manually enabled directly through the camera's web interface The mode settings of H.264 and MPEG-4 operation needs to be explicitly set at the camera Video standard has been wrongly represented in this case as video mode, which is 1.3 megapixel mode, with 4:3 and 16:9 aspect ratio settings. Image white-balance supports 3 settings, namely "1" – Auto White balance control mode "2" – Auto tracking white balance mode "3" – Auto tracking white balance under a sodium lamp mode For NP304, it is not recommended to use audio in this model due to the camera limitation on the number of RTSP session. Using audio might resulted in losing live video. For NF302, at very low frame-rate settings for MPEG-4, i.e. 1fps – 3 fps it has been observed the effective frame-rate is much lower of the order between 0.5 fps – 1.5 fps. It is recommended to use higher frame-rate settings in these models.
NS202, NS202A	By default, the MPEG-4 capability is turned off programmatically. This will effectively disabled the audio capability, since the Panasonic handler utilizes MPEG-4 stream for audio streaming MJPEG frame rate can be reduced if MPEG4 is manually enabled directly through the camera's web interface Number of presets supported is 64 Image white-balance supports 3 settings, namely "1" – Auto White balance control mode "2" – Auto tracking white balance mode "3" – Auto tracking white balance under a sodium lamp mode
NP244, NF284	When MPEG-4 transmission is set to On, the maximum frame rate for MJPEG is 5fp When MPEG-4 transmission is set to On, the maximum frame rate for MJPEG is 5fp. By default the MPEG-4 capability is turned off programmatically which disables the audio capability. Therefore audio is not supported. MJPEG frame rate can be reduced if MPEG4 is manually enabled directly through the camera's web interface Image white-balance supports 3 settings, namely "1" – Auto White balance control mode "2" – Auto tracking white balance mode "3" – Auto tracking white balance under a sodium lamp mode It is not recommended to use audio in this model due to the camera limitation on the number of RTSP session. Using audio might resulted in losing live video. For NP244, at very low frame-rate settings for MPEG-4, i.e. 1fps – 3 fps it has been observed the effective frame-rate is much lower of the order between 0.5 fps – 1.5 fps. It is recommended to use higher frame-rate settings in these models.
SC385, SW395 (SC384)	Although G.711 Audio codec is available on the camera, it is not supported in this release due to the lack of camera API support in this version of the camera firmware The mode settings of H.264 and MPEG-4 operation needs to be explicitly set at the camera Video standard has been wrongly represented in this case as video mode, which is 1.3 megapixel mode, with 4:3 and 16:9 aspect ratio settings. Number of presets supported is 64 Audio stream is not working with WV-SC385, as the device is still rejecting the request to establish an Audio only RTSP/RTP session. Image white-balance supports 3 settings, namely "1" – Auto White balance control mode "2" – Auto tracking white balance mode "3" – Auto tracking white balance under a sodium lamp mode
NP244, NF284, NS202A, NW484, NS954, NW964, NF302, NP304	In MPEG-4 mode, while streaming at more than 2048 Kbps these camera models only support 1 effective stream in RTSP (Documented in "Function list of camera_encoder.pdf" from Panasonic or Section 8.1 in "CGI Common Ref Panasonic_Network_camera ver1.25.pdf"). Any access to camera web GUI while using the camera in NVR might result in an error message "Too many concurrent session" displayed on camera web GUI. This shall result in display of blue screen instead of the actual video. Selection of MJPEG in camera web GUI should restore the video.

Generic	Does not support any other settings other than video, audio and event stream related functions The mode settings of H.264 and MPEG-4 operation need to be explicitly set at the camera. On providing an incorrect password or configuring incorrect password group to Panasonic camera there is some behavioral difference from other camera families where certain properties are shown as “unknown” and certain GET only device properties are still displayed (like mac-address, firmware version information, serial number etc…)
SP302, SP305, SP306 , (SF342, SF346)	Picture quality is 1.3 mega pixels; there are two aspect ratios 4:3 & 16:9. MPEG-4 is not available when 16:9 is selected When either H.264 or MPEG-4 transmission is set to On, the maximum frame rate for MJPEG is 5fps The maximum resolution for SP302/SF342 is 800x600. The maximum resolution for Sp305/306 is 1280x960 (The maximum resolution for SP305/SP306/SF346 is 1280x960) The mode settings of H.264 and MPEG-4 operation needs to be explicitly set at the camera Video standard has been wrongly represented in this case as video mode, which is 1.3 megapixel mode, with 4:3 and 16:9 aspect ratio settings. Image white-balance supports 3 settings, namely “1” – Auto White balance control mode “2” – Auto tracking white balance mode “3” – Auto tracking white balance under a sodium lamp mode When using MJPEG if a high quality setting is used while using the highest resolution of 1280x960, it results in streaming at a very high bit rate. This results in problem with Quick time playing out the stream, as there is limitation of playback of streams with high bit rate by QuickTime. However VLC seems to play it out quite fine. Solution is to use lower quality settings, maybe within 75 for this resolution usage.
SP102, SP105	SP105 is a 1.3 mega pixel camera. The SP102 is a .32 megapixel camera. There are two aspect ratios 4:3 & 16:9. The maximum frame rate for MJPEG is 5fps. The maximum resolution for SP102 is 640x480. The maximum resolution for SP105 is 1280x960 The mode settings of H.264 operation needs to be explicitly set at the camera Video standard has been wrongly represented in this case as video mode, which is 1.3 megapixel mode (for SP105) or vga mode (for SP102) , with 4:3 and 16:9 aspect ratio settings. Image white-balance supports 3 settings, namely “1” – Auto White balance control mode “2” – Auto tracking white balance mode “3” – Auto tracking white balance under a sodium lamp mode

Samsung

Supported Key Functions

- Video Stream
- Audio Stream
- PTZ
- Query Device
- Dry Contact Events

Video Stream

Supports MPEG4, MJPEG and H264 streams

(Only viable dual streaming is a combination of MPEG4 + MJPEG, H264 + MJPEG, or H264 + MPEG4 refer to Limitations for further details)

Audio Stream

Supports G711mulaw stream

Audio stream is mixed with video stream

Dry Contact Event

Count varies from camera models

Uses HTTP Server Push mode at 1s interval

Unsupported Key Functions

- Power Off
- Get Log
- Factory Defaults
- Find Device
- Reboot

Default Ports

- Port 80 for HTTP
- Port 554 for RTSP

Default Username & Password

Username: admin

Password: 4321

Limitations

- The following models have been tested and confirmed with Samsung SNV-5010, SNZ-5200, SND-3080, SND-5080, SND-7080, SNP-3120, SNP-3371/3302(b), SNP-5200, SPE-400. All other models listed have been confirmed with Samsung to work as designed under the Samsung API but have not been tested by American Dynamics. There may be potential risks when using these non-tested models.
- Interface '*CameraName*' is not supported as the camera has no CGI command for this interface.
- Video standard change is not supported. The SND 3080, SNP 3120, SNB 3002 are fixed PAL / NTSC. For other cameras there is a setting for changing PAL/NTSC on the Camera Web Gui but this only changes the analog output.
- Samsung cameras have no CGI command for getting autofocus status, and only a few cameras support setting it to on. The handler does not support autofocus property.
- Samsung cameras do not directly support video codec quality, but use compression rate on the MJPEG stream for this purpose. A high level of compression equals a low level of quality. The cameras' valid compression value range is 1-20. NVR reverse converts it to 5-100%. Quality is not supported for H264 or MJPEG4 for any cameras.
  SND-3080 does not support MJPEG stream compression. The camera’s web page has a quality setting, but there is no specified API. So, the handler will not support MJPEG stream quality for this camera.
- Most APIs of the camera run very slowly. Test results found setting a factory default can speed up the response. Therefore, before adding a camera to the NVR, setting the camera to factory default is recommended.

  Test results:

  - Changing resolution, FPS, quality will take about 30 seconds;
  - Adding camera to NVR can take more than 15 s.
  - Needs about 60s to display video when changing stream from stream 1 to stream 2; after clicking the apply button.
  - Enabling dry contact might make the NVR consider the camera as offline, thereby audio tab and dry contact tabs disappear. If this happens, click **Refresh**
- Do not change the camera's video profile settings on the Camera Gui when the camera is added to the NVR, otherwise changing FPS, resolution, bitrate or creating video stream may fail. Also after the camera is added into NVR, the user MUST not change the current video standard setting, or change the 2M/3M setting on the SND 7080.

- For SPE-400, each Samsung encoder's channel has an independent IP. To add an encoder to the NVR, the user should add every channel one by one. Only the first channel supports audio. Each channel supports 1 AlarmIn.
- Some of the camera information (e.g. FPS ranges) provided by Samsung Support differs from the camera's actual capabilities as found on the Web Gui. The Handler uses API results for these details.
- On SNZ 7080, SND 5080, SNV 5010, SNB 3002, valid FPS for MJPEG is limited to “1-5” if "E-mail/FTP profile" or "Record Profile" is enabled on the Camera Gui. To get full FPS of 1-30, the user must make (on camera webpage) another MJPEG profile for "E-mail/FTP profile" and "Record Profile".
- On SND 5080 and SNV 5010, after changing resolution, the valid FPS range will also be changed. Camera's current FPS will be set to the max (if prior FPS was larger than the new max value) or min (if prior FPS was smaller than the min).
- On SND 5080 and SNV 5010, after changing resolution, valid max bitrate will be changed. Camera's current bitrate will be set to the min one (if prior bitrate was smaller than the new min value), otherwise it will be set to the max one.
- MJPEG quality on SNZ-5200, SNP 5200 and SNP 3371 can be very bad at higher FPS, even when setting quality to 100. No such limitation on other models.
- Dual streaming will reduce the FPS. If both streams are set to 30 FPS, you will get approximately 15 FPS on each stream. Reducing the FPS on Stream 2 will increase the FPS on Stream 1. This has been confirmed as a camera limitation by Samsung.
- If you enable audio on H264 or MPEG4, the FPS will drop roughly in half. This is because the camera opens another video stream and extracts the audio from it.
- Some cameras (SND-3080 and cameras covered by it) cannot provide MPEG4 and H.264 at same time. They can support either H264 & MJPEG or MPEG4 & MJPEG. Before adding this camera to the NVR you must go to 'Setup' on the camera web gui and choose “video select” as either H264 or MPEG4. The user must not change this setting when the camera is already added to the NVR.
- Generic Handler Limitations:
    - The camera MUST be able to provide at least two profiles, and the codec of profile1 MUST be H264, the codec of profile2 MUST be MJPEG;
    - The camera MUST support set/get FPS with real FPS value (not the index of it in valid FPS list). For example, if a camera's valid FPS are "1-25", should support by giving "1-25" itself, not only support "0-24" as index.
    - The camera MUST support set/get resolution with forward index. For example: if the supported resolutions that are given by camera are: 1024x768,640x480,1280x720,800x600, handler assume the index is based

zero and start from 1024x768. Then if handler wants to set 1280x720 to camera, the index is '2'.

- Handler uses TYPE2 (Samsung different cameras use different APIs, defined in their formal datasheet, named TYPE1 and TYPE2, TYPE2 is used by most cameras) command to communicate with generic camera.
- Since most on-sale cameras do not support bitrate feature, generic camera will not support it.
- Generic camera does not support PTZ, lens and image settings. For codec settings, there are some limitations:
  - The compression (generic uses it as quality) valid value MUST be continuous from 1-20, 1 is best, 20 is worst;
  - The GOP valid value MUST be continuous from 1-15;
- Default values of codec properties:
  - Default FPS is the middle one (if the middle one is not supported, use previous one); For example, if valid FPS are 1,2,3,4, default value is '2', if the valid FPSs are "1,2,3", default value is '1';
  - Default Quality is 70;
  - Default resolution is the first one in the valid list. For example, if the valid resolution list which giving by the camera is: 1024x768,640x480,1280x720,800x600, handler use '1024x768' as default.
  - Default key frame interval is 14.

Known Issues

- Several cameras' (such as SNZ-5200, SND-5080, SNP-3430H, SNP-5200, SNV-5010, SNZ-5200) valid resolutions are not listed in min-max (image width) order. It is because these cameras use resolution index to communicate with the camera, and their resolutions are not ordered from min to max.
- Although the key cameras in some groups (SND-3080, SND-7080) support brightness, some cameras covered by them do not support it, so the NVR web image page will display the brightness property value as BLANK.
- When the resolution is lower than 800x600, the image's bottom edge may have a mosaic or color block.
- Found duplicate Timestamps in NVR4.2.1.0. At Higher FPS, more duplicated time stamps were found. This issue causes the NVR to sometimes restart the video stream.
  At higher FPS, the count of duplicate timestamps is increased
  When the issue happens, NVR4.2.1 log will report a [isLargeTimeChange] issue.The vendor confirmed they have found this issue.
- For SPE series and SNB-3000 series (for example, SND-3080), AlarmIn reacts very slowly. It can be up to 4 seconds from manually triggering AlarmIn pins before the camera reports the alarm.
- For SND-3080, camera may report false alarms for both AlarmIns when setting active state for any AlarmIn. When the active state is set to HIGH, the camera randomly reports false alarm status, which will cause wrong alarms in NVR.
- Live view latency is about 500ms (H264, MJPEG, MPEG4).

- If FPS is too low, RTSP connects to camera may timeout and then the NVR will have no video. The following cameras were found to have this issue:
    - For SNV-5010 and SND-7080, the MJPEG video will not display when the user sets fps to 1 and resolution to less than 1280*720.
    - For SND-3002 and SND-5080, the MPEG4 video will not display when the user sets FPS to <=5.
- Video and audio are sometimes out of sync on Instant Playback and Search & Retrieve in victor.
- Samsung SND 7080 gives a blurry / melting screen on victor at 320x180, 640x480, 800x600, 800x450 and 1920x1080 resolutions on H264 stream. This is a confirmed issue with Samsung due to a multi-slice algorithm which is not supported by the NVR. Enabling a second stream or an audio stream fixes this. Samsung have confirmed this and it may also affect. SNB-5000, SND-5080, SND-5080F, SNV-5080, SNV-5080R, SNV-5010, SNO-5080R, SNB-7000, SND-7080F, SNV-7080, SNV-7080R, SNP5200, SNO-7080R, SNP6002.
- Samsung SND 7080 shows an incorrect TimeStamp on Victor when on single stream. This is also due to the multi-slice algorithm.
- PTZ Controls will not work on the SNP 3120 using 1.26_120402 firmware. This is a camera firmware bug.
- Quickly adding PTZ presets caused the SNP 5200 to auto zoom in.
- NVR has a known limitation. Right after adding the camera into the NVR, enable second stream (by enabling Live, Record, Alarm or Analytics), and then click “Apply”, the NVR will report an error message like: “Could not get unused Stream for Stream 2, codec H264”. This is because Samsung handler does not support H264+H264 but the NVR wants to use this group. To avoid this issue, after enabling the second stream, the user must change the codec type so it is a different codec to Stream 1.
- Changing property may fail to update correctly if the following operations are done together, before clicking [Apply] button: enable secondary stream, change the codec type to MJPEG, change the property (FPS, resolution, etc). If this issue occurs, change the property again.

Special Points

- Some cameras (SNP-3430H, SND-3082, SNB-2000, SNB-3000, SNV-3080) have big differences to the key camera which were confirmed by the vendor. The handler changed the key camera or used Generic camera to represent them. Because we don't have these cameras for testing, there is a risk.
- If added into an NVR, cameras should not be modified outside of the NVR, or the NVR may not work properly.
- As confirmed by Samsung, F/W upgrade/downgrade problems happen frequently with SNP-3120 series. Please use the Supported Firmware Version only, and be careful when upgrading / downgrading camera of SNP-3120 series. Downgrading to 1.22_110120_1 firmware also resets the camera to default IP.

Supported Key Functions

- Video Streaming – Single and Dual
    - Video Codec – MJPEG, MPEG4 and H.264
- Audio Streaming
    - Audio codec supported depends on camera functionality
- PTZ – applies to cameras with mechanical pan, tilt and optical zoom
- Dry contact events – HTTP server push functionality is available for increase in efficiency and speed of obtaining dry contact events.

Unsupported Key Functions

- Find devices
- Power-off devices
- Get device log
- Reset to factory default
- Digital PTZ – on cameras that support internal digital PTZ

Audio/Video Stream Feature

- Changing the stream settings such as codec, resolution, FPS or quality of a selected video stream may require up to 5 seconds of time delay to re-establish the video stream.
- Video quality settings for MJPEG can range from 1–10. VE-NVR normalized values are 10–100 with increment step of 10. Video quality setting is not applicable for MPEG4 or H.264.
- Video bit-rate control settings for MPEG4 and H.264 must be done via the camera web page.

Required Network Parts

- Port 80 is for HTTP

- Port 554 is for RTSP

Default Username & Password

- Username: admin
- Password: admin

Limitations

- SONY 5th generation cameras set with motion-detection using MJPEG or MPEG4 will present the limitation that if H.264 has been used for the primary stream, it cannot be used for the secondary. Video Motion Detection is only available on MJPEG video stream.
- For Sony Cameras of 3rd and 4th Generation, the NVR Advanced Edit Web Page may not permit the user to change codec to MPEG4 (as the fields may appear empty) when the user changes to this camera codec configuration. If the user requires MPEG4 codec configuration, please upload the latest NVR 4.2.1 camera pack to provide the codec configuration.
- PTZ functions are not supported on all Sony Encoders due to the Sony API performance limitation.
- Relative Focus and Iris are not supported on all Sony Encoders.
- PTZ functions are not supported on SNC-RZ50
- Relative Iris is not supported, which means victor Client won't be able to adjust the Iris. However the absolute Iris adjustment is available through the Camera web page.
- Digital PTZ is not supported.
- SNC-CS50N/P, DF50N/P, SNC-DF80N/P, DF85N/P, RX530N/P, SNC-RX550N/P and RX570N/P Due to SONY camera performance limitation on H.264 stream the camera can support only 1 video stream.
- SNC-CM120, SNC-CS20, SNC-DM110, SNC-DM160, SNC-DS10 and SNC-DS60 Due to the camera performance limitation on the RTSP/RTP protocol the camera can support only 1 video stream, either MJPEG or MPEG4.
- Due to SONY performance limitation with their 5th generation cameras, Dual Video Streaming might not deliver the requested FPS or resolution for both streams. Recommended workaround:
    - Establish the primary, more-demanding stream first. From the NVR camera-configuration web-page, use either Stream-1 or Stream-2 to establish the stream with the larger resolution, the larger frame-rate, or the more process-intensive codec (H.264). In a typical application, this would be for Record and for Live-view. Note that for some camera models, H.264 codec at the maximum

resolution might not be able to handle the maximum frame-rate even in single-stream use (MPEG4 is less intensive and may handle the maximum frame-rate).

- For a secondary stream, the remaining camera processing power and bandwidth can be configured. In a typical application, this would be for motion-detection using MJPEG or MPEG4.
- If H.264 has been used for the primary stream, do not use H.264 for the secondary.
- If the resolution of the primary stream is much larger than 640x480, then pick a smaller resolution for the secondary, generally not much more than 640x480.
- Pick a modest frame-rate, such as 5 FPS.
- After the primary stream has been configured on the NVR, then go to the camera web GUI to see what remaining choices are available. Then use the NVR camera-configuration web-page to make secondary-stream selections to avoid the risk of camera over-configuration. In some cases, values noticeably larger than the above recommended limits may be available. Be sure to use the NVR camera-configuration web-page for the final configuration (rather than the direct camera web interface) because the NVR must know what values have been selected.
- The configuration limits available for a secondary stream might be different between two cameras of the same model, same firmware level, and same primary stream configuration depending on other camera configuration choices, such as Wide-Dynamic-Range (which, in some implementations, may cut the maximum available frame-rate in half).
- The result of serious over-configuration can have different results on different camera models. In some cases, the secondary resolution and frame-rate values that are too large are simply replaced with smaller values. In other cases, it appears that the camera will attempt to run the configuration resulting in the camera responses becoming slower - instead of a fraction of second, responses can take longer. The NVR operations that assume time-out after 3 seconds run very badly, filling the syslog with failure messages every few seconds.
- One possible result of over-configuration is that if the primary stream has been running at less than maximum resolution or maximum frame rate, and then is set to the maximum, the response from the camera may be to accept the new primary values and drop a previously-running secondary stream. The primary stream should be fully configured first.
- The recovery from a seriously over-configured camera may require camera reboot using the direct camera web interface or camera power-cycle.

- SONY 5th generation cameras when primary stream is set to 640x480 or greater then pick a smaller resolution for the secondary, generally not more than 640x480.
- VideoEdge NVR Web Client resolution limitation with SONY megapixel cameras, won’t display video with resolution of width or height at 2048 pixels or higher.
- Due to the above limitation, it is recommended to set the aspect ratio of CH210, DH210/210T to 16:9 prior to configuring them on VideoEdge NVR. The 4:3 aspect ratios can be set after they are configured on the NVR. However, re-adjusting the FPS, resolution may be necessary for them to work properly with NVR.